



Jonathan Adenuga  
10/10/2000 01:34 PM



1003915

To: Christine Liszewski  
Subject: Sampling results from LTV Steel

To summarize, this is what we have

- 1) **SWMU #65.** This is the former coking operations unit at the facility. Hydropunch groundwater samples collected from the area revealed presence of phenol, naphthalene, pyrene, fluorene e.t.c. These hazardous constituents are consistent with coking operations as described in 40 CFR 261.32 and Appendix VII to Part 261. The hazardous waste nos. are K141 through K 148.
- 2) **No. 84" Strip Mill Roll-Shop Waste.** 15 sludge samples were collected and analyzed from this unit. 5 of the 15 sludge samples show chromium concentration above the 5mg/l regulatory threshold. Chromium concentration in these samples range from 5.29mg/l to 8.08mg/l.
- 3) **SWMUS #11, #28/29, #45 and #50** Sampling results from these SWMUs did not show any exceedence for all hazadous constituents.

*I will make copies of the data package for you. I have a summary page for the roll-shop waste. None for the coke samples. Please let Tracey know about this.*

**Total Samples of Roll Shop Waste Analyzed for Chromium**

**LTV Steel Company  
East Chicago, Indiana**

<b><u>Sampling Date</u></b>	<b><u>Concentrations (mg/L)</u></b>	<b><u>Type of Sample</u></b>	<b><u>Source Test Method</u></b>
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**Lab**

12/6/89	<b>12</b>	Comp.	Roll Shop	EP	N
12/12/89	2.2	Comp.	Roll Shop	EP	N
12/19/89	<b>7.0</b>	Comp.	Roll Shop	EP	N
4/4/91	1.5		84" HSM	EP	Q
4/4/91	0.3		#3 SM	EP	Q
4/4/91	4.2		#2 TM	EP	Q
3/25/91	< 0.04		84" HSM	EP	N
3/25/91	0.61		#2 TM	EP	N
3/25/91	1.5		#3 SM	EP	N
2/11/91	<b>7.5</b>		#3 SM	EP	A
2/11/91	2.2		84" HSM	EP	A
2/11/91	< 0.5		#2 TM	EP	A
5/17/91	.38		Roll Shop	TCLP	A
10/10/91	1.3		Roll Shop	TCLP	A
4/8/92	1.5		Roll Shop	TCLP	E
9/23/92	.16	Roll Shop	Roll Shop	TCLP	E
5/20/93	BDL	Grab	84" HSM	TCLP	E
5/20/93	<b>9.9</b>	Grab	#2 TM	TCLP	E
5/19/93	4.6	Grab	#3 SM	TCLP	E
11/18/93	2.7	Grab	#2 TM	TCLP	E
11/18/93	1.9	Grab	#3 SM	TCLP	E
11/18/93	<b>7.0</b>	Grab	84" HSM	TCLP	E
8/30/94	3.5	Comp.	#2 TM	TCLP	E
9/13/94	1.5	Comp.	#3 SM	TCLP	E
9/13/94	BDL		84" HSM	TCLP	E
3/15/95	0.2	Comp.	#3 SM	TCLP	E
3/15/95	BDL	Comp.	84" HSM	TCLP	E
3/16/95	0.7	Comp.	#2 TM	TCLP	E
9/13/95	BDL		84" HSM	TCLP	E
9/13/95	0.2		#3 SM	TCLP	E
9/13/95	0.4	Comp.	#2 TM	TCLP	E
9/12/96	1.2	Grab	#3 SM	TCLP	E
9/12/96	BDL	Grab	84" HSM	TCLP	E
9/13/96	BDL	Grab	#2 TM	TCLP	E
3/14/96	0.4	Comp.	#2 TM	TCLP	E

3/13/96	BDL	Comp.	84" HSM	TCLP	E
3/13/96	1.7	Comp.	#3 SM	TCLP	E
9/13/96	0.5		#2 TM	TCLP	E
9/13/96	BDL		#2 TM	TCLP	E
9/13/96	<b>7.9</b>	Grab	#2 TM	TCLP	E
5/10/96	<b>5.4</b>		#2 TM	TCLP	E
9/18/96	ND/BDL	Comp.	#2 TM	TCLP	N
9/17/96	<b>21.8</b> /BDL	Comp.	84" HSM	TCLP	N
9/17/96	4.7/BDL	Comp.	84" HSM	TCLP	N
9/17/96	<b>11.3</b> /BDL*	Comp.	84" HSM	TCLP	N
9/17/96	<b>5.55</b> /3.6	Comp.	#3 SM	TCLP	N
9/17/96	4.5/2.9	Comp.	#3 SM	TCLP	N
9/17/96	4.05/2.6	Comp.	#3 SM	TCLP	N
9/18/96	4.74/BDL	Comp.	#2 TM	TCLP	N
9/18/96	<b>14.33</b> /3.3	Comp.	#2 TM	TCLP	N
9/18/96	3.39/BDL	Comp.	#2 TM	TCLP	N
9/18/96	1.28/BDL	Comp.	#2 TM	TCLP	N
9/18/96	<b>7.66</b> /.3	Comp.	#2 TM	TCLP	N
9/18/96	ND/BDL	Comp.	#2 TM	TCLP	E
9/19/97	BDL	Grab	#2 TM	TCLP	E
9/19/97	BDL	Grab	#2 TM	TCLP	E
9/19/97	BDL	Grab	#2 TM	TCLP	E
9/19/97	1.1	Grab	#2 TM	TCLP	E
9/18/97	3.7	Comp.	84" HSM	TCLP	E
9/18/97	0.2	Comp.	#3 SM	TCLP	E
3/13/97	4.3		#3 SM	TCLP	E
3/13/97	1.9		84" HSM	TCLP	E
3/14/97	1.3		#2 TM	TCLP	E
3/14/97	<b>5.9</b>		#2 TM	TCLP	E
3/14/97	BDL		#2 TM	TCLP	E
4/9/98	BDL	Grab	#2 TM	TCLP	E
4/9/98	BDL	Grab	#2 TM	TCLP	E
4/9/98	0.1	Comp.	#2 TM	TCLP	E
4/9/98	0.2	Comp.	84" HSM	TCLP	E
4/8/98	0.1	Comp.	#3 SM	TCLP	E

Formal review & Comments to the LTV Steel 3007 Information Request Response  
New information in support of enforcement action

**Exhibit A ..LTV's Waste Analysis Plan (Response to request 2&3)**

Based on the Waste Analysis Plan (WAP) and analytical results from samples collected from the #2 Tin Mill and the 84" Hot Mill Roll Grinder, I have been able to establish the following:

- a) Pursuant to 40 CFR 265.13, the LTV WAP was developed in accordance with the provisions of this requirement. The WAP, described the objectives as " sampling to document representative samples for characterizing the waste streams as required under 40 CFR 261.
- b) Based on sampling methodology, samples collected in 1993, 1995 through 1997 were all grab samples.

According to 40 CFR 268.4, representativeness must be based on grab samples. Therefore, all samples collected during these waste characterization exercise are representative of the nature of the Roll-shop waste.

**Exhibit B, Sampling Results from Specific locations within each Roll-shop**

**84" Hot Mill Roll Grinder**

- a) WAP described collection of samples from the dumpster box.
- b) Result of grab sample # C152186 collected 11/18/1993, show chromium concentration of 7.0 mg/l.

**#2 Tin Mill Grinder**

- a) Result of Grab sample #C147595 collected in November 1993, showed chromium concentration of 9.9 mg/l. This sample was collected from a structure referred to as the **POMONI**, also described as the Hopper in the WAP.
- b) Results of grab samples WAP # 73-9 collected from the POMONI on 5/13/96 and WAP # 73-30 collected 5/13/96 from the Temper Grinder sump showed chromium concentration of 5.4 mg/l.  
These two samples are composites of the hopper and the sump.
- c) Results of grab samples WAP # 9609-17032 collected 9/25/96 and WAP # 9605-13014 collected 5/28/96 and WAP # 9703-19017 collected 3/27/97 showed chromium concentrations of 7.9 mg/l, 5.4 mg/l and 5.9 mg/l respectively. These samples were all collected from the Hopper/sump.

My preliminary conclusion based on the above discussion is to go forward with the contemplated



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: SEP 11 2000

Subject: Review of Region 5 Data for LTV Steel

From: John V. Morris, Chemist  
Region 5 Central Regional Laboratory

To: Brian Freeman  
DE -95

Attached are the results for Site: LTV Steel

CRL Data Set Number: 20000047

for analyses of: Chromium (TCLP of Sludge) and Chromium and Lead (TCLP of Soil)

Results are reported for sample numbers:

Sludge: 2000RC02S32, 2000RC02S33, 2000RC02S34, 2000RC02S35, 2000RC02S36,  
2000RC02S37, 2000RC02S38, 2000RC02D38, 2000RC02S39, 2000RC02S40, 2000RC02S41,  
2000RC02D41, 2000RC02S42, 2000RC02S43, 2000RC02S44, 2000RC02S45, 2000RC02S46 and  
2000RC02S47

Soil: 2000RC02S16, 2000RC02D16, 2000RC02S17, 2000RC02S19, 2000RC02S20,  
2000RC02S21, 2000RC02S22, 2000RC02S24, 2000RC02S25, 2000RC02S26, 2000RC02S27,  
2000RC02S29, 2000RC02D29 and 2000RC02S30

Results Status:

- ( ) Acceptable for Use  
( x ) Data Qualified, but Acceptable for use, per narrative  
( ) Data Unacceptable for Use

*Data appear  
Acceptable for use.*

*BBF Freeman  
9/13/00*

Date: 8 September 2000

Analyst: John V. Morris

Sample Batch Number: 20000047

Facility Name: LTV Steel

Analyte: Chromium in TCLP (Sludge)

Chromium and Lead in TCLP (Soil)

**Narrative for the Analysis of Chromium in TCLP Extracts of Sludges in Batch 20000047  
and**

**Analysis of Chromium and Lead in TCLP Extracts of Soils in Batch 20000047**

On 12 July 2000, seventeen soil samples (2000RC02S16-S30, D16, D29) were received by CRL for the analysis of total RCRA metals. The total data was requested to determine if TCLP was to be done. If the sample would extract 100% in TCLP, it would require, for example, at least 100 mg Cr/kg to exceed the TCLP limits of 5 mg Cr/L in the extract. The samples were collected on 11 July 2000. The total data has been submitted in a separate package, and those samples which were within  $\pm 20\%$  of 100 mg Cr/kg were extracted using SW-846 Method 1311 (CRL SOP GC006). Three of the samples also exceeded 100 mg Pb/kg, so lead was also analyzed in these extracts.

On 13 July 2000, eighteen sludge samples (2000RC02S32-S47, D38, D41) were received by CRL for the analysis of total chromium. Similarly, the total data was requested to determine if TCLP was to be done. The samples were collected on 12 July 2000. The total data has been submitted in a separate package. All sludge samples were well above the limit of 100 mg Cr/kg. The samples were gray in color, with tiny metallic slivers interspersed throughout the sample. Samples 2000RC02S32, S33, S34, S35, S37, S38, D38, S39, S40, S41, and S42 all had water separated from the sludge in the jar. Notably, 2000RC02S41 and 2000RC02D41 were different in this respect.

The initial measurement by XRF of the sludges indicated that all sludge samples were in the vicinity of 1% Cr or more, so all samples were extracted by TCLP. The initial pH measurement for the sludges (necessary to determine which extraction fluid to use) was taken from the SW-846 Method 9045C measurements done 25-27 July 2000 by F. Awanya. Because all of these were greater than 5, the measurement with the addition of HCl was necessary. Again, all were pH > 5, so extraction fluid 2 was used for all samples. The samples with no liquid in the sample jar and the extract blank were extracted beginning on 31 July 2000 and finishing on 1 August 2000. The samples with liquid in the jar were then filtered and extracted on 2 August 2000 to 3 August 2000. After filtering and measuring the final pH, the samples were preserved with sufficient nitric acid to bring the pH to less than 2. J.V. Morris, M. Knopp and C. Tang participated in the extraction.

Total metals in the soil samples were analyzed by ICP on 4 August 2000, and all samples except 2000RC02S18, 2000RC02S23, and 2000RC02S28 were candidates for TCLP by the 20-times

## CRL Data Review Qualification Codes

QUALIFIER	DESCRIPTION
B	This flag is used when the analyte is found in the associated <u>Blank</u> as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data.
D	This flag is used when the analyte concentration results from a required <u>Dilution</u> of the sample, extract or digestate.
E	This flag is used to identify analyte concentrations <u>Exceeding</u> the upper calibration range of the analytical instrument after dilution of the sample, extract or digestate. <u>The reported value is considered to be estimated</u>
J	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, at or above the CRL reporting limit (RL) but the quantitated value is <u>estimated</u> due to quality control limit(s) being exceeded. This flag accompanies all GC/MS tentatively identified compounds (TICs). This flag also applies to a suspected, unidentified interference. <u>(J is the flag used in the Superfund CLP SOW and Data Review Functional Guidelines and is used by CRL for consistency.)</u>
M	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, at or above the CRL <u>Method Detection Limit</u> (MDL) but below the CRL reporting limit (RL). This flag applies to all values in this concentration range and indicates the quantitated value is <u>estimated</u> due to its presence in this concentration range.
N	This flag applies to GC/MS <u>Tentatively Identified Compounds</u> (TICs) that have a mass spectral library match.
Q	This flag applies to analyte data that are severely estimated due to quality control and/or <u>Quantitation</u> problems, but are confirmed to be qualitatively present in the sample. <u>No value is reported with this qualification flag.</u>
R	This flag applies to analyte data that are <u>Rejected</u> and unusable due to severe quality control, quantitation and/or qualitative identification problems. No other qualification flags are reported for this analyte. <u>No value is reported with this qualification flag.</u>
U	This flag is used when the analyte was analyzed but <u>Undetected</u> in the sample. The CRL RL for the analyte accompanies this flag. As with sample results that are positive, the value is corrected for dry weight, dilution and/or sample weight or volume.

TCLP  
if total > 100 2000-06-17  
ENVIRONMENTAL PROFILE  
FOR THE LEAD METAL

ENVIRONMENTAL PROTECTION AGENCY  
FOR THE TRAITS METALS

901021

REGISTRATION/PERMIT RCRA

200000 47

901021

9/5/00

**ENVIRONMENTAL PROTECTION AGENCY  
FOR THE TEAM 8 METALS**

RCA

VISION/MHANCH RECH SAMPLING DATE +12-00 LAH ARRIVAL DATE 7/13/00 DUe DATE 8/17/00  
NUMBER 901020 DATASET NUMBER 20000047 STUDY LTV Steel PRIORITY N CONTRACTOR TechLaw

US EPA CRL - Region V  
 ICP Final Report Results  
 TCLP Extracts

Sample Batch Number: 20000047      Study: LTV Steel  
 Analysis Date: 29 Aug 00

Sample ID	Station ID	Analyte	Concentration	Units
2000RC02S32	D1	Cr	0.03 U,D	mg/L
2000RC02S33	E3	Cr	0.03 U,D	mg/L
2000RC02S34	A3	Cr	0.03 U,D	mg/L
2000RC02S35	A4	Cr	0.17 D	mg/L
2000RC02S36	A5	Cr	5.29 D	mg/L
2000RC02S37	B4	Cr	0.08 D	mg/L
2000RC02S38	B3	Cr	0.03 U,D	mg/L
2000RC02D38	B3	Cr	0.04 D	mg/L
2000RC02S39	C2	Cr	0.28 D	mg/L
2000RC02S40	C3	Cr	0.34 D	mg/L
2000RC02S41	C4	Cr	0.73 D	mg/L
2000RC02D41	C4	Cr	3.30 D	mg/L ~Duplicate
2000RC02S42	C5	Cr	1.27 D	mg/L
2000RC02S43	C6	Cr	2.70 D	mg/L
2000RC02S44	D3	Cr	5.30 D	mg/L
2000RC02S45	D4	Cr	6.51 D	mg/L
2000RC02S46	D5	Cr	7.56 D	mg/L
2000RC02S47	D6	Cr	8.08 D	mg/L

5 out of 15 were TC for chromium

JVM  
 8 Sept 00

US EPA CRL - Region V  
 ICP Final Report Results  
 TCLP Extracts

	Sample Batch Number: Analysis Date:		20000047 30 Aug 00	Study: LTV Steel
Sample ID	Station ID	Analyte	Concentration	Units
2000RC02S16	SWMU45-SE	Cr	0.03 U,D	mg/L
		Pb	0.10 U,D	mg/L
2000RC02D16	SWMU45SED	Cr	0.03 U,D	mg/L
		Pb	0.10 U,D	mg/L
2000RC02S17	SWMU45-E	Cr	0.03 U,D	mg/L
		Pb	0.10 U,D	mg/L
2000RC02S19	SWMU45-W	Cr	0.03 U,D	mg/L
		Pb	0.10 U,D	mg/L
2000RC02S20	SWMU50-WNW	Cr	0.03 U,D	mg/L
		Pb	0.10 U,D	mg/L
2000RC02S21	SWMU50-SSE	Cr	0.03 U,D	mg/L
		Pb	0.10 U,D	mg/L
2000RC02S22	SWMU50-N	Cr	0.03 U,D	mg/L
		Pb	0.10 U,D	mg/L
2000RC02S24	SWMU11-NE/SE	Cr	0.03 U,D	mg/L
		Pb	0.10 U,D	mg/L
2000RC02S25	SWMU11-N	Cr	0.03 U,D	mg/L
		Pb	0.10 U,D	mg/L
2000RC02S26	SWMU11-S	Cr	0.03 U,D	mg/L
		Pb	0.10 U,D	mg/L
2000RC02S27	SWMU11-NE/NW	Cr	0.03 U,D	mg/L
		Pb	0.10 U,D	mg/L
2000RC02S29	SWMU28/29-SE/NE	Cr	0.03 U,D	mg/L
		Pb	0.10 U,D	mg/L
2000RC02D29	SWMU28/29-SE/NE	Cr	0.03 U,D	mg/L
		Pb	0.10 U,D	mg/L
2000RC02S30	SWMU28/29-N	Cr	0.03 U,D	mg/L
		Pb	0.10 U,D	mg/L

July 8 2000

TCLP  
if total > ext 2000 00/17  
ENVIRONMENTAL PROFILE  
FOR THE LEAD METAL

**ENVIRONMENTAL PROTECTION AGENCY  
FOR THE LEAD METALS**

90102D

DIVISION/BRANCH RCRA

SAMPLING DATE 7-11-00 LAR ARRIVAL DATE 7/12/00 DUE DATE 8/28/00  
BY TTI Steel APPROVED N CONTRACTING PERIOD 1/1/00 - 12/31/00

CRN LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENTS SOLID				
		TOTAL ICAP **	%	Hg	%	%
200RC02S16	Swmu 45-SE	X			X	TL
200RC02S17	Swmu 45-E	X			X	
200RC02S18	Swmu 45-SW	X		X	X	
200RC02S19	Swmu 45-W	X		X	X	
200RC02S20	Swmu 50-W/Nw	X		X	X	
2000RC02S21	Swmu 50-S/SE	X		X	X	
2000RC02S22	Swmu 50-N	X		X	X	
2000RC02S23	Swmu 50-N Tank	X		X	X	
2000RC02S24	Swmu 11-NE/SE	X		X	X	
2000RC02S25	Swmu 11-N	X		X	X	
2000RC02S26	Swmu 11-S	X		X	X	
2000RC02S27	Swmu 11-NE/Nw	X		X	X	
2000RC02S28	Swmu 28/29-NE	X		X	X	
2000RC02S29	Swmu 28/29-SE/NE	X		X	X	
2000RC02S30	Swmu 28/29-N	X		X	X	
2000RC02D16	Swmu 45-SE Dmp	X		X	X	
2000RC02B27	Post S27 Rinse	X		X	X	
2000RC02D29	Swmu 28/29-SE/NE	X		X	X	
	** RCRA-8 matrix					
	* WATER BULK					

200000 47

90102 D

9/5/00

ENVIRONMENTAL PROTECTION AGENCY  
FOR THE TEAM8 METALS

RCRA

SAMPLING DATE 7-12-00

ARRIVAL DATE 7/13/00

DATE 8/27/00

~~8/23/00~~

#### **VISION/HYPNOSIS**

NUMBER 901020

#### **DATABASE NUMBER**

2000047

LTV Steel

PH104117-A

CONTRACTOR

DATE 8/3/00

US EPA CRL - Region V  
ICP Final Report Results  
TCLP Extracts

Sample Batch Number: 20000047      Study: LTV Steel  
Analysis Date: 29 Aug 00

Sample ID	Station ID	Analyte	Concentration	Units
2000RC02S32	D1	Cr	0.03 U,D	mg/L
2000RC02S33	E3	Cr	0.03 U,D	mg/L
2000RC02S34	A3	Cr	0.03 U,D	mg/L
2000RC02S35	A4	Cr	0.17 D	mg/L
2000RC02S36	A5	Cr	5.29 D	mg/L
2000RC02S37	B4	Cr	0.08 D	mg/L
2000RC02S38	B3	Cr	0.03 U,D	mg/L
2000RC02D38	B3	Cr	0.04 D	mg/L
2000RC02S39	C2	Cr	0.28 D	mg/L
2000RC02S40	C3	Cr	0.34 D	mg/L
2000RC02S41	C4	Cr	0.73 D	mg/L
2000RC02D41	C4	Cr	3.30 D	mg/L
2000RC02S42	C5	Cr	1.27 D	mg/L
2000RC02S43	C6	Cr	2.70 D	mg/L
2000RC02S44	D3	Cr	5.30 D	mg/L
2000RC02S45	D4	Cr	6.51 D	mg/L
2000RC02S46	D5	Cr	7.56 D	mg/L
2000RC02S47	D6	Cr	8.08 D	mg/L

JRW  
8 Sept 00



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

AUG 17, 2000

[DUPLICATE]

Date: SEP 07 2000

Subject: Review of Region 5 Data for LTV STEEL  
From: Babu Paruchuri, Chemist *bp*  
Region 5 Central Regional Laboratory

To: Brian Freeman  
*DE-9J*

Attached are the results for Site: LTV STEEL

CRL Data Set Number: 20000047

for analyses of: ABNs

Results are reported for sample numbers: (List of sample numbers) 2000RC02S01-S06, -D05 and -R03 (Eight Water Samples)

Results Status:

- (X) Acceptable for Use for all site samples except 2000RC02S02.
- (X) Data Qualified, but Acceptable for use for the field sample 2000RC02S02.
- (X) Data Unacceptable for Use for 3,3'-dichlorobenzidine.

Attached are the data for the above site samples.

*Data appear  
Acceptable for use.  
B. Freeman  
9/13/00*

20000047

90102 D

# **ENVIRONMENTAL PROTECTION AGENCY FOR THE TEAM: TOXIC SUBSTANCES**

DIVISION/BRANCH R CRA

**SAMPLE DATE** 7/11/00

**LAB ARRIVAL DATE** 7/12/00

**DUE DATE** 8/28/00

DIVISION/BRANCH \_\_\_\_\_  
DU NUMBER 9070210

**DATA SET NUMBER** 2000  
0047

**STUDY** LTV STB82

PRIORITY A

CONTRACTOR TECHLAW

## CASE NARRATIVE

DATE: September 5, 2000

PROJECT NAME: LTV Steel - CRL Case# 20000047 Analysis of Acid/Base/Neutral (ABN) Compounds by GC/MS

PRIMARY ANALYST: Babu Paruchuri, Chemist *BP*

PEER REVIEWER: Nidia Fuentes, Chemist *MF*

### I. CASE DESCRIPTION:

The laboratory received eight water samples (2000RC02S01 to -S06, -D05 and -R03) from the subject site on July 12, 2000 for ABN analysis. These samples were collected on July 11, 2000. They were extracted by one-step continuous extraction technique on July 14, 2000, which is within sample holding time requirement. The QC criterion for water sample holding time for extraction is seven days from day of collection and for analysis, it is 40 days from the day of extraction. The laboratory collected site data for the target compounds within the analysis holding time. These samples were received at the laboratory in good condition.

### II. INSTRUMENT QUALITY CONTROLS:

#### 1. Instrument Performance Checks (IPC):

On each day of sample analysis GC/MS instrument performance checks using DFTPP were made on GC/MS#2 (H-P 5973) to determine whether the CRL GC/MS tuning criteria were met. The GC/MS instrument met the tuning criteria specified by the CRL SOP GCMS026.

2. Initial Calibrations (IC): An acceptable five-point IC is required for all target compounds before samples can be analyzed. Two IC curves were generated to analyze the site samples. The first IC data generated on July 28 met the CRL QC criterion (each analyte's %RSD must be  $\leq 35\%$ ) for all the TCLs except benzoic acid and 2,4-dinitrophenol. The second IC data generated on August 2, 2000 had the following outliers: benzoic acid, 2,4-dinitrophenol and pentachlorophenol. The affected compound data were qualified UJ (estimated reporting limit) since none of these compounds was detected at the site.

3. Continuing Calibrations (CC):

On each day of analysis the laboratory met the CC requirements ( $\%D \leq 25\%$ ) for all the target compounds, except for the following: on July 29, 2000 benzoic acid, 2,4-dinitrophenol, 4-nitrophenol, 4,6-dinitro-2-methylphenol, and pentachlorophenol did not meet the QC criteria and on August 2, 2000 benzoic acid and pentachlorophenol did not meet the QC criteria. Because these compounds were not detected at the site, their reporting limit data were qualified estimated (UJ).

4. Internal Standard (IS) Area and Retention Time (RT)

Summary: The QC criterion states that the areas of ISs must be within a factor of two of the IS area of the corresponding CC. The RT of the IS for samples must also be within 30 seconds of the RT of the IS for the corresponding CC. No problems were observed.

**III. METHOD QUALITY CONTROL:**

1. Method Blank Results: The lab's method blank data were acceptable. Neither the TCLs nor any TICs were detected in the sample.

2. Surrogate Spike Compound Results: The surrogate compound recovery data were acceptable for all the site samples except for the following problems: Method Blank sample yielded lower recoveries for two of the three base/neutral surrogates and sample -S02 yielded no recoveries for the surrogates since the lab did not spike this sample with the surrogate spike compounds. Therefore, the affected site data were qualified estimated (UJ for non detects and J for detects).

3. Laboratory Control Sample (LCS): Not Applicable. See below section III. 4, MS/MSD sample data.

4. Matrix Spike and Matrix Spike Duplicate Samples (MS/MSD): The laboratory collected site specific precision and accuracy data by spiking -S01 (Tar Storage Tank) with the TCLs, extracting and analyzing these samples with the rest of the site samples. The MS/MSD recoveries for benzoic acid and pentachlorophenol (PCP) were biased high, while the MS/MSD samples yielded no recoveries for 3,3'-dichlorobenzidine. Because benzoic acid and PCP were not detected at the site, no data qualifications were necessary. 3,3'-Dichlorobenzidine data were qualified R (Unacceptable for use). Also, since naphthalene was detected in the native sample at higher levels and since the amount of naphthalene spiked in the MS/MSD samples was insignificant, no precision and accuracy data assessment can be made for this compound.

#### **IV. SAMPLE RESULTS:**

The laboratory generated data of acceptable quality for all of the TCLs except 3,3-dichlorobenzidine and for the field sample -S02. The site sample -S01, -S01MS, -S01MSD, -S02 and -S06 required dilutions. The site data were qualified as per the CRL SOP.

1B  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**Lab Blank**

Lab Name: LTV STEEL Contract: ML-10C  
 Lab Code: USEPA-R5 Case No.: 20000047 SAS No.:        SDG No.: GCMS026  
 Matrix: (soil/water) WATER Lab Sample ID: LAB BLANK  
 Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2C072807.D  
 Level: (low/med) LOW Date Received: 7/14/00  
 % Moisture:        decanted:(Y/N) N Date Extracted: 07/14/00  
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/00  
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH:       

## CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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111-44-4	bis(2-Chloroethyl)ether	5	UJ	
108-95-2	Phenol	5	U	
95-57-8	2-Chlorophenol	5	U	
541-73-1	1,3-Dichlorobenzene	5	UJ	
106-46-7	1,4-Dichlorobenzene	5	UJ	
95-50-1	1,2-Dichlorobenzene	5	UJ	
100-51-6	Benzyl alcohol	5	UJ	
95-48-7	2-Methylphenol	5	U	
106-44-5	4-Methylphenol	5	U	
108-60-1	bis(2-chloroisopropyl)ether	5	UJ	
67-72-1	Hexachloroethane	5	UJ	
621-64-7	N-Nitroso-di-n-propylamine	5	UJ	
98-95-3	Nitrobenzene	5	UJ	
78-59-1	Isophorone	5	UJ	
88-75-5	2-Nitrophenol	5	U	
105-67-9	2,4-Dimethylphenol	5	U	
65-80-0	Benzoic acid	5	UJ	
111-91-1	bis(2-Chloroethoxy)methane	5	UJ	
120-83-2	2,4-Dichlorophenol	5	U	
120-82-1	1,2,4-Trichlorobenzene	5	UJ	
91-20-3	Naphthalene	5	UJ	
106-47-8	4-Chloroaniline	5	UJ	
87-68-3	Hexachlorobutadiene	5	UJ	
59-50-7	4-Chloro-3-methylphenol	5	U	
91-57-6	2-Methylnaphthalene	5	UJ	
77-47-4	Hexachlorocyclopentadiene	5	UJ	
88-06-2	2,4,6-Trichlorophenol	5	U	
95-95-4	2,4,5-Trichlorophenol	20	U	
91-58-7	2-Chloronaphthalene	5	UJ	
88-74-4	2-Nitroaniline	5	UJ	
208-96-8	Acenaphthylene	5	UJ	
131-11-3	Dimethylphthalate	5	UJ	
606-20-2	2,6-Dinitrotoluene	5	UJ	
83-32-9	Acenaphthene	5	UJ	
99-09-2	3-Nitroaniline	20	UJ	
51-28-5	2,4-Dinitrophenol	20	UJ	
132-64-9	Dibenzofuran	5	UJ	

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**Lab Blank**

Lab Name:	LTV STEEL	Contract:	ML-10C
Lab Code:	USEPA-R5	Case No.:	20000047
Matrix: (soil/water)	WATER	Lab Sample ID:	LAB BLANK
Sample wt/vol:	1000 (g/ml)	Lab File ID:	2C072807.D
Level: (low/med)	LOW	Date Received:	7/14/00
% Moisture:	decanthed:(Y/N) N	Date Extracted:	07/14/00
Concentrated Extract Volume:	1000 (uL)	Date Analyzed:	07/28/00
Injection Volume:	1.0 (uL)	Dilution Factor:	1.0
GPC Cleanup: (Y/N)	N	pH:	

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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121-14-2	2,4-Dinitrotoluene	5	U <input checked="" type="checkbox"/>
100-02-7	4-Nitrophenol	5	U
86-73-7	Fluorene	5	U <input checked="" type="checkbox"/>
7005-72-3	4-Chlorophenyl-phenylether	5	U <input checked="" type="checkbox"/>
84-66-2	Diethylphthalate	5	U <input checked="" type="checkbox"/>
100-01-6	4-Nitroaniline	20	U <input checked="" type="checkbox"/>
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	n-Nitrosodiphenylamine	5	U <input checked="" type="checkbox"/>
101-55-3	4-Bromophenyl-phenylether	5	U <input checked="" type="checkbox"/>
118-74-1	Hexachlorobenzene	5	U <input checked="" type="checkbox"/>
87-86-5	Pentachlorophenol	5	U
85-01-8	Phenanthrene	5	U <input checked="" type="checkbox"/>
120-12-7	Anthracene	5	U <input checked="" type="checkbox"/>
86-74-8	Carbazole	5	U <input checked="" type="checkbox"/>
84-74-2	Di-n-butylphthalate	5	U <input checked="" type="checkbox"/>
206-44-0	Fluoranthene	5	U <input checked="" type="checkbox"/>
129-00-0	Pyrene	5	U <input checked="" type="checkbox"/>
85-68-7	Butylbenzylphthalate	5	U <input checked="" type="checkbox"/>
91-94-1	3,3'-Dichlorobenzidine		<del>UR</del>
56-55-3	Benzo[a]anthracene	5	U <input checked="" type="checkbox"/>
218-01-9	Chrysene	5	U <input checked="" type="checkbox"/>
117-81-7	bis(2-Ethylhexyl)phthalate	2	J <input checked="" type="checkbox"/>
117-84-0	Di-n-octylphthalate	5	U <input checked="" type="checkbox"/>
205-99-2	Benzo[b]fluoranthene	5	U <input checked="" type="checkbox"/>
207-08-9	Benzo[k]fluoranthene	5	U <input checked="" type="checkbox"/>
50-32-8	Benzo[a]pyrene	5	U <input checked="" type="checkbox"/>
193-39-5	Indeno[1,2,3-cd]pyrene	5	U <input checked="" type="checkbox"/>
53-70-3	Dibenz[a,h]anthracene	5	U <input checked="" type="checkbox"/>
191-24-2	Benzo[g,h,i]perylene	5	U <input checked="" type="checkbox"/>

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET      EPA SAMPLE NO.  
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: <u>LTV STEEL</u>	Contract: <u>ML-10C</u>	<u>Lab Blank</u>
Lab Code: <u>USEPA-R5</u>	Case No.: <u>20000047</u>	SAS No.: _____ SDG No.: <u>GCMS026</u>
Matrix: (soil/water) <u>WATER</u>	Lab Sample ID: <u>LAB BLANK</u>	
Sample wt/vol: <u>1000</u> (g/ml) <u>ML</u>	Lab File ID: <u>2C072807.D</u>	
Level: (low/med) <u>LOW</u>	Date Received: <u>7/19/00</u>	
% Moisture: _____	decanted: (Y/N) <u>N</u>	Date Extracted: <u>07/14/00</u>
Concentrated Extract Volume: <u>1000</u> (uL)	Date Analyzed: <u>07/28/00</u>	
Injection Volume: <u>1.0</u> (uL)	Dilution Factor: <u>1.0</u>	
GPC Cleanup: (Y/N) <u>N</u>	pH: _____	

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B  
SEMICVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2000RC03R03

Lab Name:	LTV STEEL	Contract:	ML-10C
Lab Code:	USEPA-R5	Case No.:	20000047
Matrix: (soil/water)	WATER	SDG No.:	GCMS026
Sample wt/vol:	1000 (g/ml)	Lab Sample ID:	2000RC02R03
Level: (low/med)	LOW	Lab File ID:	2C072808.D
% Moisture:		Date Received:	7/12/00
Concentrated Extract Volume:	1000 (uL)	Date Extracted:	07/14/00
Injection Volume:	1.0 (uL)	Date Analyzed:	07/28/00
GPC Cleanup: (Y/N)	N	Dilution Factor:	1.0
pH:			

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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111-44-4	bis(2-Chloroethyl)ether	5	U
108-95-2	Phenol	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	3	J
100-51-6	Benzyl alcohol	5	U
95-48-7	2-Methylphenol	5	U
106-44-5	4-Methylphenol	5	U
108-60-1	bis(2-chloroisopropyl)ether	5	U
67-72-1	Hexachloroethane	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-80-0	Benzoic acid	5	U ✓
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Choronaphthalene	5	U
88-74-4	2-Nitroaniline	5	U
208-96-8	Acenaphthylene	5	U
131-11-3	Dimethylphthalate	5	U
606-20-2	2,6-Dinitrotoluene	5	U
83-32-9	Acenaphthene	5	U
99-09-2	3-Nitroaniline	20	U
51-28-5	2,4-Dinitrophenol	20	U ✓
132-64-9	Dibenzofuran	5	U

1C  
SEMICVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC03R03**

Lab Name: LTV STEEL Contract: ML-10C

Lab Code: USEPA-R5 Case No.: 20000047 SAS No.:        SDG No.: GCMS026

Matrix: (soil/water) WATER Lab Sample ID: 2000RC02R03

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2C072808.D

Level: (low/med) LOW Date Received: 7/12/00

% Moisture: \_\_\_\_\_ decanted:(Y/N) N Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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121-14-2	2,4-Dinitrotoluene	5	U
100-02-7	4-Nitrophenol	5	U
86-73-7	Fluorene	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
84-66-2	Diethylphthalate	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	n-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	5	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
86-74-8	Carbazole	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	UR
56-55-3	Benzo[a]anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo[b]fluoranthene	5	U
207-08-9	Benzo[k]fluoranthene	5	U
50-32-8	Benzo[a]pyrene	5	U
193-39-5	Indeno[1,2,3-cd]pyrene	5	U
53-70-3	Dibenz[a,h]anthracene	5	U
191-24-2	Benzo[g,h,i]perylene	5	U

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET      EPA SAMPLE NO.  
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: LTV STEEL      Contract: ML-10C      2000RC03R03

Lab Code: USEPA-R5      Case No.: 20000047      SAS No.: \_\_\_\_\_ SDG No.: GCMS026

Matrix: (soil/water) WATER      Lab Sample ID: 2000RC02R03

Sample wt/vol: 1000 (g/ml) ML      Lab File ID: 2C072808.D

Level: (low/med) LOW      Date Received: 7/12/00

% Moisture: \_\_\_\_\_ decanted: (Y/N) N      Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL)      Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL)      Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

Number TICs found: 0      (ug/L or ug/Kg)      UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S01  
SUMMARY**

Lab Name: LTV STEEL Contract: ML-10C  
 Lab Code: USEPA-R5 Case No.: 20000047 SAS No.: SDG No.: GCMS026  
 Matrix: (soil/water) WATER Lab Sample ID: 2000RC02S01  
 Sample wt/vol: 990 (g/ml) ML Lab File ID: 2C072809.D  
 Level: (low/med) LOW Date Received: 7/12/00  
 % Moisture: \_\_\_\_\_ decanted:(Y/N) N Date Extracted: 07/14/00  
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/00  
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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111-44-4	bis(2-Chloroethyl)ether	5	U
108-95-2	Phenol	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	2	J
100-51-6	Benzyl alcohol	5	U
95-48-7	2-Methylphenol	2	J
106-44-5	4-Methylphenol	5	U
108-60-1	bis(2-chloroisopropyl)ether	5	U
67-72-1	Hexachloroethane	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	
65-80-0	Benzoic acid	5	U J
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	380 290	E D
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	3	J
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	5	U
208-96-8	Acenaphthylene	12	
131-11-3	Dimethylphthalate	5	U
606-20-2	2,6-Dinitrotoluene	5	U
83-32-9	Acenaphthene	62	
99-09-2	3-Nitroaniline	20	U
51-28-5	2,4-Dinitrophenol	20	U J
132-64-9	Dibenzofuran	7	

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2000RC02S01
SUMMARY

Lab Name: LTV STEEL Contract: ML-10C

Lab Code: USEPA-R5 Case No.: 20000047 SAS No.: SDG No.: GCMS026

Matrix: (soil/water) WATER Lab Sample ID: 2000RC02S01

Sample wt/vol: 990 (g/ml) ML Lab File ID: 2C072809.D

Level: (low/med) LOW Date Received: 7/12/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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121-14-2	2,4-Dinitrotoluene	16		
100-02-7	4-Nitrophenol	5	U	
86-73-7	Fluorene	16		
7005-72-3	4-Chlorophenyl-phenylether	5	U	
84-66-2	Diethylphthalate	5	U	
100-01-6	4-Nitroaniline	20	U	
534-52-1	4,6-Dinitro-2-methylphenol	20	U	
86-30-6	n-Nitrosodiphenylamine	5	U	
101-55-3	4-Bromophenyl-phenylether	5	U	
118-74-1	Hexachlorobenzene	5	U	
87-86-5	Pentachlorophenol	5	U	
85-01-8	Phenanthrene	7		
120-12-7	Anthracene	5	U	
86-74-8	Carbazole	20		
84-74-2	Di-n-butylphthalate	5	U	
206-44-0	Fluoranthene	5	U	
129-00-0	Pyrene	5	U	
85-68-7	Butylbenzylphthalate	5	U	
91-94-1	3,3'-Dichlorobenzidine	5	UR	
56-55-3	Benzo[a]anthracene	5	U	
218-01-9	Chrysene	5	U	
117-81-7	bis(2-Ethylhexyl)phthalate	6	B	
117-84-0	Di-n-octylphthalate	5	U	
205-99-2	Benzo[b]fluoranthene	5	U	
207-08-9	Benzo[k]fluoranthene	5	U	
50-32-8	Benzo[a]pyrene	5	U	
193-39-5	Indeno[1,2,3-cd]pyrene	5	U	
53-70-3	Dibenz[a,h]anthracene	5	U	
191-24-2	Benzo[g,h,i]perylene	5	U	

1F  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET      EPA SAMPLE NO.  
 TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	<u>LTV STEEL</u>	Contract:	<u>ML-10C</u>	<b>2000RC02S01</b>
Lab Code:	<u>USEPA-R5</u>	Case No.:	<u>20000047</u>	SUMMARY
Matrix: (soil/water)	<u>WATER</u>	Lab Sample ID:	<u>2000RC02S01</u>	
Sample wt/vol:	<u>990</u> (g/ml)	ML	Lab File ID:	<u>2C072809.D</u>
Level: (low/med)	<u>LOW</u>	Date Received:	<u>7/12/00</u>	
% Moisture:		decanted: (Y/N)	<u>N</u>	Date Extracted: <u>07/14/00</u>
Concentrated Extract Volume:	<u>1000</u> (uL)	Date Analyzed:	<u>07/28/00</u>	
Injection Volume:	<u>1.0</u> (uL)	Dilution Factor:	<u>1.0</u>	
GPC Cleanup: (Y/N)	<u>N</u>	pH:		

CONCENTRATION UNITS:

Number TICs found: 8 (ug/L or ug/Kg)      UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000095-13-6	1H-Indene (CAS) \$\$ Inden \$\$ Ind	9.09	27	JN
2. 000086-55-5	1-Naphthalenecarboxylic acid (C	18.76	8	JN
3. 000000-00-0	2-Hydroxyfluorene	21.66	14	JN
4. 000321-64-2	Tacrine \$\$ 9-Acridinamine, 1,2,3,	22.24	8	JN
5. 000081-84-5	1H,3H-Naphtho[1,8-cd]pyran-1,3-	22.87	47	JN
6. 000081-83-4	1H-Benz[de]isoquinoline-1,3(2H)-	23.43	14	JN
7.	unknown	24.48	6	J
8. 000000-00-0	8-methyl-4-azafluorenone	24.79	15	JN

1B  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S02**  
**SUMMARY**

Lab Name: LTV STEEL

Contract: ML-10C

Lab Code: USEPA-R5 Case No.: 20000047 SAS No.:  SDG No.: GCMS026

Matrix: (soil/water) WATER Lab Sample ID: 2000RC02S02

Sample wt/vol: 980 (g/ml) ML Lab File ID: 2C072810.D

Level: (low/med) LOW Date Received: 7/12/00

% Moisture:  decanted:(Y/N) N Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
---------	----------	-----------------	------	---

111-44-4	bis(2-Chloroethyl)ether	5	U J
108-95-2	Phenol	120	E D
95-57-8	2-Chlorophenol	5	U J
541-73-1	1,3-Dichlorobenzene	5	U J
106-46-7	1,4-Dichlorobenzene	5	U J
95-50-1	1,2-Dichlorobenzene	5	U J
100-51-6	Benzyl alcohol	5	U J
95-48-7	2-Methylphenol	32	J
106-44-5	4-Methylphenol	88	J
108-60-1	bis(2-chloroisopropyl)ether	5	U J
67-72-1	Hexachloroethane	5	U J
621-64-7	N-Nitroso-di-n-propylamine	5	U J
98-95-3	Nitrobenzene	5	U J
78-59-1	Isophorone	5	U J
88-75-5	2-Nitrophenol	5	U J
105-67-9	2,4-Dimethylphenol	19	J
65-80-0	Benzoic acid	5	U J
111-91-1	bis(2-Chloroethoxy)methane	5	U J
120-83-2	2,4-Dichlorophenol	5	U J
120-82-1	1,2,4-Trichlorobenzene	5	U J
91-20-3	Naphthalene	1700 800	E D
106-47-8	4-Chloroaniline	5	U J
87-68-3	Hexachlorobutadiene	5	U J
59-50-7	4-Chloro-3-methylphenol	5	U J
91-57-6	2-Methylnaphthalene	39	J
77-47-4	Hexachlorocyclopentadiene	5	U J
88-06-2	2,4,6-Trichlorophenol	52	v J
95-95-4	2,4,5-Trichlorophenol	20	U J
91-58-7	2-Chloronaphthalene	5	U J
88-74-4	2-Nitroaniline	5	U J
208-96-8	Acenaphthylene	84	J
131-11-3	Dimethylphthalate	5	U J
606-20-2	2,6-Dinitrotoluene	5	U J
83-32-9	Acenaphthene	22	J
99-09-2	3-Nitroaniline	20	U J
51-28-5	2,4-Dinitrophenol	20	U J
132-64-9	Dibenzofuran	13	J

BP 8/7/00  
9/5/00

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S02**  
**SUMMARY**

Lab Name: LTV STEEL Contract: ML-10C

Lab Code: USEPA-R5 Case No.: 20000047 SAS No.:  SDG No.: GCMS026

Matrix: (soil/water) WATER Lab Sample ID: 2000RC02S02

Sample wt/vol: 980 (g/ml) ML Lab File ID: 2C072810.D

Level: (low/med) LOW Date Received: 7/13/00

% Moisture: \_\_\_\_\_ decanted:(Y/N) N Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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121-14-2	2,4-Dinitrotoluene	5	U J
100-02-7	4-Nitrophenol	5	U J
86-73-7	Fluorene	16	J
7005-72-3	4-Chlorophenyl-phenylether	5	U J
84-66-2	Diethylphthalate	5	U J
100-01-6	4-Nitroaniline	20	U J
534-52-1	4,6-Dinitro-2-methylphenol	20	U J
86-30-6	n-Nitrosodiphenylamine	5	U J
101-55-3	4-Bromophenyl-phenylether	5	U J
118-74-1	Hexachlorobenzene	5	U J
87-86-5	Pentachlorophenol	16	J
85-01-8	Phenanthrene	14	J
120-12-7	Anthracene	5	J
86-74-8	Carbazole	75	J
84-74-2	Di-n-butylphthalate	5	U J
206-44-0	Fluoranthene	6	J
129-00-0	Pyrene	4	J
85-68-7	Butylbenzylphthalate	5	U J
91-94-1	3,3'-Dichlorobenzidine	5	U R
56-55-3	Benzo[a]anthracene	5	U J
218-01-9	Chrysene	5	U J
117-81-7	bis(2-Ethylhexyl)phthalate	5	U J
117-84-0	Di-n-octylphthalate	5	U J
205-99-2	Benzo[b]fluoranthene	5	U J
207-08-9	Benzo[k]fluoranthene	5	U J
50-32-8	Benzo[a]pyrene	5	U J
193-39-5	Indeno[1,2,3-cd]pyrene	5	U J
53-70-3	Dibenz[a,h]anthracene	5	U J
191-24-2	Benzo[g,h,i]perylene	5	U J

By Shaffer  
9/15/00

1F  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET      EPA SAMPLE NO.  
 TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	LTV STEEL	Contract:	ML-10C	<b>2000RC02S02</b>		
Lab Code:	USEPA-R5	Case No.:	20000047	SAS No.:	SDG No.:	GCMS026
Matrix: (soil/water)	WATER	Lab Sample ID:	2000RC02S02			
Sample wt/vol:	980 (g/ml)	Lab File ID:	2C072810.D			
Level: (low/med)	LOW	Date Received:	7/13/00			
% Moisture:		Date Extracted:	07/14/00			
Concentrated Extract Volume:	1000 (uL)	Date Analyzed:	07/28/00			
Injection Volume:	1.0 (uL)	Dilution Factor:	1.0			
GPC Cleanup: (Y/N)	N	pH:				

CONCENTRATION UNITS:

Number TICs found:	10	(ug/L or ug/Kg)	UG/L	
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000095-13-6	1H-Indene (CAS) \$\$ Inden \$\$ Ind	9.10	51	JN
2. 000086-55-5	1-Naphthalenecarboxylic acid (C	18.84	30	JN
3. 002439-04-5	5-Isoquinolinol \$\$ 5-Hydroxyisoq	19.47	72	JN
4.	unknown	19.83	76	J
5. 000086-77-1	2-Dibenzofuranol (CAS) \$\$ 2-Hyd	20.95	30	JN
6. 000086-77-1	2-Dibenzofuranol (CAS) \$\$ 2-Hyd	21.07	35	JN
7. 000000-00-0	2-Hydroxyfluorene	21.70	30	JN
8. 000081-84-5	1H,3H-Naphtho[1,8-cd]pyran-1,3-	23.04	360	JN
9. 000081-83-4	1H-Benz[de]isoquinoline-1,3(2H)-	23.56	36	JN
10. 000235-98-3	phenanthro[9,10-b]furan	26.46	18	JN

1B  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S03**

Lab Name: LTV STEEL Contract: ML-10C

Lab Code: USEPA-R5 Case No.: 20000047 SAS No.:        SDG No.: GCMS026  
 Matrix: (soil/water) WATER Lab Sample ID: 2000RC02S03  
 Sample wt/vol: 950 (g/ml) ML Lab File ID: 2C072811.D  
 Level: (low/med) LOW Date Received: 7/12/00  
 % Moisture: \_\_\_\_\_ decanted:(Y/N) N Date Extracted: 07/14/00  
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/00  
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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111-44-4	bis(2-Chloroethyl)ether	5	U	
108-95-2	Phenol	2	S M	
95-57-8	2-Chlorophenol	5	U	
541-73-1	1,3-Dichlorobenzene	5	U	
106-46-7	1,4-Dichlorobenzene	5	U	
95-50-1	1,2-Dichlorobenzene	2	S M	
100-51-6	Benzyl alcohol	5	U	
95-48-7	2-Methylphenol	5	U	
106-44-5	4-Methylphenol	5	U	
108-60-1	bis(2-chloroisopropyl)ether	5	U	
67-72-1	Hexachloroethane	5	U	
621-64-7	N-Nitroso-di-n-propylamine	5	U	
98-95-3	Nitrobenzene	5	U	
78-59-1	Isophorone	5	U	
88-75-5	2-Nitrophenol	5	U	
105-67-9	2,4-Dimethylphenol	5	U	
65-80-0	Benzoic acid	5	U S	
111-91-1	bis(2-Chloroethoxy)methane	5	U	
120-83-2	2,4-Dichlorophenol	5	U	
120-82-1	1,2,4-Trichlorobenzene	5	U	
91-20-3	Naphthalene	3	S M	
106-47-8	4-Chloroaniline	5	U	
87-68-3	Hexachlorobutadiene	5	U	
59-50-7	4-Chloro-3-methylphenol	5	U	
91-57-6	2-Methylnaphthalene	5	U	
77-47-4	Hexachlorocyclopentadiene	5	U	
88-06-2	2,4,6-Trichlorophenol	5	U	
95-95-4	2,4,5-Trichlorophenol	21	U	
91-58-7	2-Choronaphthalene	5	U	
88-74-4	2-Nitroaniline	5	U	
208-96-8	Acenaphthylene	5	U	
131-11-3	Dimethylphthalate	5	U	
606-20-2	2,6-Dinitrotoluene	5	U	
83-32-9	Acenaphthene	4	S M	
99-09-2	3-Nitroaniline	21	U	
51-28-5	2,4-Dinitrophenol	21	U T	
132-64-9	Dibenzofuran	6		

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S03**

Lab Name: **LTV STEEL**

Contract: **ML-10C**

Lab Code: **USEPA-R5** Case No.: **20000047** SAS No.:  SDG No.: **GCMS026**

Matrix: (soil/water) **WATER** Lab Sample ID: **2000RC02S03**

Sample wt/vol: **950** (g/ml) **ML** Lab File ID: **2C072811.D**

Level: (low/med) **LOW** Date Received: **7/12/00**

% Moisture:  decanted:(Y/N) **N** Date Extracted: **07/14/00**

Concentrated Extract Volume: **1000** (uL) Date Analyzed: **07/28/00**

Injection Volume: **1.0** (uL) Dilution Factor: **1.0**

GPC Cleanup: (Y/N) **N** pH:

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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121-14-2	2,4-Dinitrotoluene	5	U	
100-02-7	4-Nitrophenol	5	U	
86-73-7	Fluorene	12		
7005-72-3	4-Chlorophenyl-phenylether	5	U	
84-66-2	Diethylphthalate	5	U	
100-01-6	4-Nitroaniline	21	U	
534-52-1	4,6-Dinitro-2-methylphenol	21	U	
86-30-6	n-Nitrosodiphenylamine	5	U	
101-55-3	4-Bromophenyl-phenylether	5	U	
118-74-1	Hexachlorobenzene	5	U	
87-86-5	Pentachlorophenol	5	U	
85-01-8	Phenanthrene	2	SM	
120-12-7	Anthracene	3	SM	
86-74-8	Carbazole	4	SM	
84-74-2	Di-n-butylphthalate	5	U	
206-44-0	Fluoranthene	25		
129-00-0	Pyrene	14		
85-68-7	Butylbenzylphthalate	5	U	
91-94-1	3,3'-Dichlorobenzidine	5	UR	
56-55-3	Benz[a]anthracene	3	SM	
218-01-9	Chrysene	2	SM	
117-81-7	bis(2-Ethylhexyl)phthalate	5	U	
117-84-0	Di-n-octylphthalate	5	U	
205-99-2	Benzo[b]fluoranthene	5	U	
207-08-9	Benzo[k]fluoranthene	5	U	
50-32-8	Benzo[a]pyrene	5	U	
193-39-5	Indeno[1,2,3-cd]pyrene	5	U	
53-70-3	Dibenz[a,h]anthracene	5	U	
191-24-2	Benzo[g,h,i]perylene	5	U	

1F  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET      EPA SAMPLE NO.  
 TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	LTV STEEL	Contract:	ML-10C	2000RC02S03
Lab Code:	USEPA-R5	Case No.:	20000047	SAS No.: SDG No.: GCMS026
Matrix: (soil/water)	WATER	Lab Sample ID: 2000RC02S03		
Sample wt/vol:	950	(g/ml)	ML	Lab File ID: 2C072811.D
Level: (low/med)	LOW	Date Received: 7/12/00		
% Moisture:		decanted: (Y/N)	N	Date Extracted: 07/14/00
Concentrated Extract Volume:	1000	(uL)		Date Analyzed: 07/28/00
Injection Volume:	1.0	(uL)		Dilution Factor: 1.0
GPC Cleanup: (Y/N)	N	pH:		

CONCENTRATION UNITS:

Number TICs found: 9 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 032267-71-3	2(3H)-Benzofuranone, 3-methyl-	13.89	30	JN
2. 000093-35-6	2H-1-Benzopyran-2-one, 7-hydro	15.51	10	JN
3. 000050-84-0	Benzoic acid, 2,4-dichloro- (CAS)	16.68	5	JN
4. 089185-31-9	1,2-dihydrocyclobuta[b]naphthalene	18.68	59	JN
5. 000486-25-9	9H-Fluoren-9-one (CAS) \$\$ Fluor	19.62	8	JN
6. 000203-64-5	4H-Cyclopenta[def]phenanthrene	21.71	6	JN
7. 000057-10-3	Hexadecanoic acid (CAS) \$\$ Pal	22.02	5	JN
8. 000081-84-5	1H,3H-Naphtho[1,8-cd]pyran-1,3-	22.95	6	JN
9. 004540-48-1	3,4,5,6-tetramethylphthalic acid a	28.59	42	JN

UNKNOWNs

13.00-33.00

19.00

J

1B  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2000RC02S04

Lab Name: LTV STEEL

Contract: ML-10C

Lab Code: USEPA-R5

Case No.: 20000047

SAS No.:

SDG No.: GCMS026

Matrix: (soil/water) WATER

Lab Sample ID: 2000RC02S04

Sample wt/vol: 960 (g/ml) ML

Lab File ID: 2C072812.D

Level: (low/med) LOW

Date Received: 7/12/00

% Moisture: decanted:(Y/N) N

Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 07/29/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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111-44-4	bis(2-Chloroethyl)ether	5	U	
108-95-2	Phenol	5	U	
95-57-8	2-Chlorophenol	5	U	
541-73-1	1,3-Dichlorobenzene	5	U	
106-46-7	1,4-Dichlorobenzene	5	U	
95-50-1	1,2-Dichlorobenzene	3	J M	
100-51-6	Benzyl alcohol	5	U	
95-48-7	2-Methylphenol	5	U	
106-44-5	4-Methylphenol	5	U	
108-60-1	bis(2-chloroisopropyl)ether	5	U	
67-72-1	Hexachloroethane	5	U	
621-64-7	N-Nitroso-di-n-propylamine	5	U	
98-95-3	Nitrobenzene	5	U	
78-59-1	Isophorone	5	U	
88-75-5	2-Nitrophenol	5	U	
105-67-9	2,4-Dimethylphenol	5	U	
65-80-0	Benzoic acid	5	U J	
111-91-1	bis(2-Chloroethoxy)methane	5	U	
120-83-2	2,4-Dichlorophenol	5	U	
120-82-1	1,2,4-Trichlorobenzene	5	U	
91-20-3	Naphthalene	13		
106-47-8	4-Chloroaniline	5	U	
87-68-3	Hexachlorobutadiene	5	U	
59-50-7	4-Chloro-3-methylphenol	5	U	
91-57-6	2-Methylnaphthalene	5	U	
77-47-4	Hexachlorocyclopentadiene	5	U	
88-06-2	2,4,6-Trichlorophenol	5	U	
95-95-4	2,4,5-Trichlorophenol	21	U	
91-58-7	2-Chloronaphthalene	5	U	
88-74-4	2-Nitroaniline	5	U	
208-96-8	Acenaphthylene	5	U	
131-11-3	Dimethylphthalate	5	U	
606-20-2	2,6-Dinitrotoluene	5	U	
83-32-9	Acenaphthene	3	J M	
99-09-2	3-Nitroaniline	21	U	
51-28-5	2,4-Dinitrophenol	21	U J	
132-64-9	Dibenzofuran	3	J M	

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S04**

Lab Name:	LTV STEEL	Contract:	ML-10C
Lab Code:	USEPA-R5	Case No.:	20000047
Matrix: (soil/water)	WATER	SDG No.:	GCMS026
Sample wt/vol:	960 (g/ml)	Lab Sample ID:	2000RC02S04
Level: (low/med)	ML	Lab File ID:	2C072812.D
% Moisture:		Date Received:	7/12/00
Concentrated Extract Volume:	1000 (uL)	Date Extracted:	07/14/00
Injection Volume:	1.0 (uL)	Date Analyzed:	07/29/00
GPC Cleanup: (Y/N)	N	Dilution Factor:	1.0
pH:			

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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121-14-2	2,4-Dinitrotoluene	5	U
100-02-7	4-Nitrophenol	5	U
86-73-7	Fluorene	4	JM
7005-72-3	4-Chlorophenyl-phenylether	5	U
84-66-2	Diethylphthalate	5	U
100-01-6	4-Nitroaniline	21	U
534-52-1	4,6-Dinitro-2-methylphenol	21	U
86-30-6	n-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	5	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
86-74-8	Carbazole	30	
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	UR
56-55-3	Benzo[a]anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo[b]fluoranthene	5	U
207-08-9	Benzo[k]fluoranthene	5	U
50-32-8	Benzo[a]pyrene	5	U
193-39-5	Indeno[1,2,3-cd]pyrene	5	U
53-70-3	Dibenz[a,h]anthracene	5	U
191-24-2	Benzo[g,h,i]perylene	5	U

1F  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET      EPA SAMPLE NO.  
 TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: LTV STEEL      Contract: ML-10C

2000RC02S04

Lab Code: USEPA-R5      Case No.: 20000047      SAS No.:       SDG No.: GCMS026

Matrix: (soil/water) WATER      Lab Sample ID: 2000RC02S04

Sample wt/vol: 960 (g/ml) ML      Lab File ID: 2C072812.D

Level: (low/med) LOW      Date Received: 7/12/00

% Moisture:       decanted: (Y/N) N      Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL)      Date Analyzed: 07/29/00

Injection Volume: 1.0 (uL)      Dilution Factor: 1.0

GPC Cleanup: (Y/N) N      pH:

CONCENTRATION UNITS:

Number TICs found: 10      (ug/L or ug/Kg)      UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000108-47-4	Pyridine, 2,4-dimethyl- (CAS) \$\$	6.85	6	JN
2. 000095-15-8	Benzof[b]thiophene (CAS) \$\$ Thia	11.87	10	JN
3. 000091-63-4	Quinoline, 2-methyl- (CAS) \$\$ 2-	13.74	6	JN
4. 000501-92-8	chavicol \$\$ para-ALLYL PHENO	13.79	6	JN
5. 003610-02-4	Benzof[b]thiophene-4-ol (CAS) \$\$	16.94	8	JN
6. 001504-06-9	3-methylindole-2(3H)-one \$\$ 1,3-	17.61	8	JN
7. 002739-16-4	1-formyl-1,2,3,4-tetrahydroquinoli	18.82	6	JN
8. 005400-75-9	2H-Benzimidazol-2-one, 1,3-dihy	21.26	10	JN
9. 000081-83-4	1H-Benz[de]isoquinoline-1,3(2H)-	23.47	7	JN
10. 000578-95-0	9(10H)-Acridinone (CAS) \$\$ Acri	24.86	12	JN

1B  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2000RC02S05

Lab Name: LTV STEEL

Contract: ML-10C

Lab Code: USEPA-R5 Case No.: 20000047 SAS No.: SDG No.: GCMS026

Matrix: (soil/water) WATER Lab Sample ID: 2000RC02S05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2C072813.D

Level: (low/med) LOW Date Received: 7/12/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

## CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

111-44-4	bis(2-Chloroethyl)ether	5	U
108-95-2	Phenol	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-48-7	2-Methylphenol	5	U
106-44-5	4-Methylphenol	5	U
108-60-1	bis(2-chloroisopropyl)ether	5	U
67-72-1	Hexachloroethane	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-80-0	Benzoic acid	5	U J
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	2	J
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	5	U
208-96-8	Acenaphthylene	5	U
131-11-3	Dimethylphthalate	5	U
606-20-2	2,6-Dinitrotoluene	5	U
83-32-9	Acenaphthene	5	U
99-09-2	3-Nitroaniline	20	U
51-28-5	2,4-Dinitrophenol	20	U J
132-64-9	Dibenzofuran	5	U

1C  
SEMICVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S05**

Lab Name:	LTV STEEL	Contract:	ML-10C	
Lab Code:	USEPA-R5	Case No.:	20000047	
Matrix: (soil/water)	WATER	Lab Sample ID:	2000RC02S05	
Sample wt/vol:	1000 (g/ml)	ML	Lab File ID:	2C072813.D
Level: (low/med)	LOW	Date Received:	7/12/00	
% Moisture:	decanted:(Y/N)	N	Date Extracted:	07/14/00
Concentrated Extract Volume:	1000 (uL)		Date Analyzed:	07/29/00
Injection Volume:	1.0 (uL)		Dilution Factor:	1.0
GPC Cleanup: (Y/N)	N	pH:		

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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121-14-2	2,4-Dinitrotoluene	5	U
100-02-7	4-Nitrophenol	5	U
86-73-7	Fluorene	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
84-66-2	Diethylphthalate	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	n-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	5	U
85-01-8	Phenanthrone	5	U
120-12-7	Anthracene	5	U
86-74-8	Carbazole	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	UR
56-55-3	Benz[a]anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo[b]fluoranthene	5	U
207-08-9	Benzo[k]fluoranthene	5	U
50-32-8	Benzo[a]pyrene	5	U
193-39-5	Indeno[1,2,3-cd]pyrene	5	U
53-70-3	Dibenz[a,h]anthracene	5	U
191-24-2	Benzo[g,h,i]perylene	5	U

1F  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET      EPA SAMPLE NO.  
 TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	LTV STEEL	Contract:	ML-10C	2000RC02S05	
Lab Code:	USEPA-R5	Case No.:	20000047	SDG No.:	GCMS026
Matrix: (soil/water)	WATER	Lab Sample ID:	2000RC02S05		
Sample wt/vol:	1000 (g/ml)	ML	Lab File ID:	2C072813.D	
Level: (low/med)	LOW	Date Received:			
% Moisture:		decanted: (Y/N)	N	Date Extracted:	07/14/00
Concentrated Extract Volume:	1000 (uL)	Date Analyzed:	07/29/00		
Injection Volume:	1.0 (uL)	Dilution Factor:	1.0		
GPC Cleanup: (Y/N)	N	pH:			

CONCENTRATION UNITS:

Number TICs found: 5 (ug/L or ug/Kg)      UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	19.77	29	J
2. 000092-48-8	2H-1-Benzopyran-2-one, 6-methy	22.57	14	JN
3. 000081-84-5	1H,3H-Naphtho[1,8-cd]pyran-1,3-	23.03	770	JN
4.	unknown hydrocarbons	23.28	140	J
5.	unknown	27.45	12	J

1B  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02D05**

Lab Name:	LTV STEEL	Contract:	ML-10C
Lab Code:	USEPA-R5	Case No.:	20000047
Matrix: (soil/water)	WATER	SDG No.:	GCMS026
Sample wt/vol:	970 (g/ml)	ML	Lab Sample ID: 2000RC02D05
Level: (low/med)	LOW	Lab File ID:	2C072814.D
% Moisture:		decanted:(Y/N) N	Date Received: 7/12/00
Concentrated Extract Volume:	1000 (uL)	Date Extracted:	07/14/00
Injection Volume:	1.0 (uL)	Date Analyzed:	07/29/00
GPC Cleanup: (Y/N)	N	pH:	Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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111-44-4	bis(2-Chloroethyl)ether	5	U	
108-95-2	Phenol	5	U	
95-57-8	2-Chlorophenol	5	U	
541-73-1	1,3-Dichlorobenzene	5	U	
106-46-7	1,4-Dichlorobenzene	5	U	
95-50-1	1,2-Dichlorobenzene	5	U	
100-51-6	Benzyl alcohol	5	U	
95-48-7	2-Methylphenol	5	U	
106-44-5	4-Methylphenol	5	U	
108-60-1	bis(2-chloroisopropyl)ether	5	U	
67-72-1	Hexachloroethane	5	U	
621-64-7	N-Nitroso-di-n-propylamine	5	U	
98-95-3	Nitrobenzene	5	U	
78-59-1	Isophorone	5	U	
88-75-5	2-Nitrophenol	5	U	
105-67-9	2,4-Dimethylphenol	5	U	
65-80-0	Benzoic acid	5	U	✓
111-91-1	bis(2-Chloroethoxy)methane	5	U	
120-83-2	2,4-Dichlorophenol	5	U	
120-82-1	1,2,4-Trichlorobenzene	5	U	
91-20-3	Naphthalene	2	JM	
106-47-8	4-Chloroaniline	5	U	
87-68-3	Hexachlorobutadiene	5	U	
59-50-7	4-Chloro-3-methylphenol	5	U	
91-57-6	2-Methylnaphthalene	5	U	
77-47-4	Hexachlorocyclopentadiene	5	U	
88-06-2	2,4,6-Trichlorophenol	5	U	
95-95-4	2,4,5-Trichlorophenol	21	U	
91-58-7	2-Choronaphthalene	5	U	
88-74-4	2-Nitroaniline	5	U	
208-96-8	Acenaphthylene	4	JM	
131-11-3	Dimethylphthalate	5	U	
606-20-2	2,6-Dinitrotoluene	5	U	
83-32-9	Acenaphthene	5	U	
99-09-2	3-Nitroaniline	21	U	
51-28-5	2,4-Dinitrophenol	21	U	✓
132-64-9	Dibenzofuran	5	U	

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02D05**

Lab Name: LTV STEEL Contract: ML-10C

Lab Code: USEPA-R5 Case No.: 20000047 SAS No.:        SDG No.: GCMS026

Matrix: (soil/water) WATER Lab Sample ID: 2000RC02D05

Sample wt/vol: 970 (g/ml) ML Lab File ID: 2C072814.D

Level: (low/med) LOW Date Received: 7/12/00

% Moisture:        decanted:(Y/N) N Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:       

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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121-14-2	2,4-Dinitrotoluene	5	U	
100-02-7	4-Nitrophenol	5	U	
86-73-7	Fluorene	5	U	
7005-72-3	4-Chlorophenyl-phenylether	5	U	
84-66-2	Diethylphthalate	5	U	
100-01-6	4-Nitroaniline	21	U	
534-52-1	4,6-Dinitro-2-methylphenol	21	U	
86-30-6	n-Nitrosodiphenylamine	5	U	
101-55-3	4-Bromophenyl-phenylether	5	U	
118-74-1	Hexachlorobenzene	5	U	
87-86-5	Pentachlorophenol	5	U	
85-01-8	Phenanthrene	5	U	
120-12-7	Anthracene	2	M	
86-74-8	Carbazole	5	U	
84-74-2	Di-n-butylphthalate	5	U	
206-44-0	Fluoranthene	5	U	
129-00-0	Pyrene	5	U	
85-68-7	Butylbenzylphthalate	5	U	
91-94-1	3,3'-Dichlorobenzidine	5	UR	
56-55-3	Benzo[a]anthracene	5	U	
218-01-9	Chrysene	5	U	
117-81-7	bis(2-Ethylhexyl)phthalate	3	JB	
117-84-0	Di-n-octylphthalate	5	U	
205-99-2	Benzo[b]fluoranthene	5	U	
207-08-9	Benzo[k]fluoranthene	5	U	
50-32-8	Benzo[a]pyrene	5	U	
193-39-5	Indeno[1,2,3-cd]pyrene	5	U	
53-70-3	Dibenz[a,h]anthracene	5	U	
191-24-2	Benzo[g,h,i]perylene	5	U	

1F  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET      EPA SAMPLE NO.  
 TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: LTV STEEL      Contract: ML-10C

2000RC02D05

Lab Code: USEPA-R5      Case No.: 20000047      SAS No.: \_\_\_\_\_ SDG No.: GCMS026

Matrix: (soil/water) WATER      Lab Sample ID: 2000RC02D05

Sample wt/vol: 970 (g/ml) ML      Lab File ID: 2C072814.D

Level: (low/med) LOW      Date Received: \_\_\_\_\_

% Moisture: \_\_\_\_\_ decanted: (Y/N) N      Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL)      Date Analyzed: 07/29/00

Injection Volume: 1.0 (uL)      Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

Number TICs found: 5      (ug/L or ug/Kg)      UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	19.76	21	J
2.	unknown	20.41	28	J
3.	unknown	21.10	21	J
4. 000081-84-5	1H,3H-Naphtho[1,8-cd]pyran-1,3-	23.22	840	JN
5.	unknown hydrocarbons	23.33	130	J

1B  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2000RC02S06
Summary

Lab Name: LTV STEEL Contract: ML-10C  
 Lab Code: USEPA-R5 Case No.: 20000047 SAS No.:  SDG No.: GCMS026  
 Matrix: (soil/water) WATER Lab Sample ID: 2000RC02S06  
 Sample wt/vol: 970 (g/ml) ML Lab File ID: 2C072815.D  
 Level: (low/med) LOW Date Received: 7/12/00  
 % Moisture: \_\_\_\_\_ decanted:(Y/N) N Date Extracted: 07/14/00  
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/00  
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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111-44-4	bis(2-Chloroethyl)ether	5	U	
108-95-2	Phenol	6		
95-57-8	2-Chlorophenol	5	U	
541-73-1	1,3-Dichlorobenzene	5	U	
106-46-7	1,4-Dichlorobenzene	5	U	
95-50-1	1,2-Dichlorobenzene	5	U	
100-51-6	Benzyl alcohol	5	U	
95-48-7	2-Methylphenol	42		
106-44-5	4-Methylphenol	39		
108-60-1	bis(2-chloroisopropyl)ether	5	U	
67-72-1	Hexachloroethane	5	U	
621-64-7	N-Nitroso-di-n-propylamine	5	U	
98-95-3	Nitrobenzene	5	U	
78-59-1	Isophorone	5	U	
88-75-5	2-Nitrophenol	5	U	
105-67-9	2,4-Dimethylphenol	24		
65-80-0	Benzoic acid	5	U	
111-91-1	bis(2-Chloroethoxy)methane	5	U	
120-83-2	2,4-Dichlorophenol	5	U	
120-82-1	1,2,4-Trichlorobenzene	5	U	
91-20-3	Naphthalene	2800	2800	SD
106-47-8	4-Chloroaniline	5	U	
87-68-3	Hexachlorobutadiene	5	U	
59-50-7	4-Chloro-3-methylphenol	5	U	
91-57-6	2-Methylnaphthalene	67		
77-47-4	Hexachlorocyclopentadiene	5	U	
88-06-2	2,4,6-Trichlorophenol	5	U	
95-95-4	2,4,5-Trichlorophenol	21	U	
91-58-7	2-Chloronaphthalene	5	U	
88-74-4	2-Nitroaniline	5	U	
208-96-8	Acenaphthylene	70		
131-11-3	Dimethylphthalate	5	U	
606-20-2	2,6-Dinitrotoluene	5	U	
83-32-9	Acenaphthene	28		
99-09-2	3-Nitroaniline	21	U	
51-28-5	2,4-Dinitrophenol	21	U	
132-64-9	Dibenzofuran	33		

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name:	LTV STEEL	Contract:	ML-10C	<b>2000RC02S06</b>
Lab Code:	USEPA-R5	Case No.:	20000047	<b>Summary</b>
Matrix: (soil/water)	WATER	Lab Sample ID:	2000RC02S06	
Sample wt/vol:	970 (g/ml)	Lab File ID:	2C072815.D	
Level: (low/med)	LOW	Date Received:	7/12/00	
% Moisture:		Date Extracted:	07/14/00	
Concentrated Extract Volume:	1000 (uL)	Date Analyzed:	07/29/00	
Injection Volume:	1.0 (uL)	Dilution Factor:	1.0	
GPC Cleanup: (Y/N)	N	pH:		

CONCENTRATION UNITS:

Number TICs found:	9	(ug/L or ug/Kg)	UG/L	
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CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000271-89-6	Benzofuran (CAS) \$\$ Coumarone	8.17	52	JN
2. 000300-57-2	Benzene, 2-propenyl- (CAS) \$\$ A	8.93	30	JN
3. 000095-15-8	Benzo[b]thiophene (CAS) \$\$ Thia	12.01	62	JN
4. 000083-33-0	1H-Inden-1-one, 2,3-dihydro- (CA	13.40	82	JN
5. 002739-16-4	1-formyl-1,2,3,4-tetrahydroquinoli	18.99	32	JN
6.	unknown	19.65	51	J
7. 000059-31-4	2(1H)-Quinolinone (CAS) \$\$ 2-Hy	19.76	38	JN
8. 000081-84-5	1H,3H-Naphtho[1,8-cd]pyran-1,3-	23.12	280	JN
9. 000578-95-0	9(10H)-Acridinone (CAS) \$\$ Acri	25.15	31	JN

UNKNOWN HYDROCARBONS

15 - 32

400

J

1C  
SEMICVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S06**

*Summary*

Lab Name: LTV STEEL Contract: ML-10C

Lab Code: USEPA-R5 Case No.: 20000047 SAS No.: SDG No.: GCMS026

Matrix: soil/water) WATER Lab Sample ID: 2000RC02S06

Sample wt/vol: 970 (g/ml) ML Lab File ID: 2C072815.D

Level: low/med) LOW Date Received: 7/12/00

% Moisture: \_\_\_\_\_ decanted:(Y/N) N Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
121-14-2	2,4-Dinitrotoluene	5	U	
100-02-7	4-Nitrophenol	5	U	
86-73-7	Fluorene	42		
7005-72-3	4-Chlorophenyl-phenylether	5	U	
54-66-2	Diethylphthalate	5	U	
100-01-6	4-Nitroaniline	21	U	
534-52-1	4,6-Dinitro-2-methylphenol	21	U	
86-30-6	n-Nitrosodiphenylamine	5	U	
101-55-3	4-Bromophenyl-phenylether	5	U	
118-74-1	Hexachlorobenzene	5	U	
87-86-5	Pentachlorophenol	5	U	
85-01-8	Phenanthrene	28		
120-12-7	Anthracene	10		
86-74-8	Carbazole	160	470	<del>EM</del>
54-74-2	Di-n-butylphthalate	5	U	
206-44-0	Fluoranthene	24		
129-00-0	Pyrene	18		
85-68-7	Butylbenzylphthalate	5	U	
51-94-1	3,3'-Dichlorobenzidine	8	UR	
56-55-3	Benzo[a]anthracene	8		
218-01-9	Chrysene	7		
117-81-7	bis(2-Ethylhexyl)phthalate	5	U	
117-84-0	Di-n-octylphthalate	5	U	
205-99-2	Benzo[b]fluoranthene	15		
207-08-9	Benzo[k]fluoranthene	5		
50-32-8	Benzo[a]pyrene	11		
193-39-5	Indeno[1,2,3-cd]pyrene	4	AM	
53-70-3	Dibenz[a,h]anthracene	5	U	
191-24-2	Benzo[g,h,i]perylene	5	U	

## CRL Data Review Qualification Codes

<b>QUALIFIER</b>	<b>DESCRIPTION</b>
<b>B</b>	This flag is used when the analyte is found in the associated <u>Blank</u> as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data. See the case narrative for a discussion of common lab contaminants and/or the relative concentration of contamination in the samples and blanks for relevance.
<b>D</b>	This flag is used when the analyte concentration results from a required <u>Dilution</u> of the sample, extract or digestate.
<b>E</b>	This flag is used to identify analyte concentrations <u>Exceeding</u> the upper calibration range of the analytical instrument after dilution of the sample, extract or digestate. <u>The reported value is considered to be estimated</u>
<b>J</b>	This flag is used when the analyte is <u>estimated</u> due to quality control limit(s) being exceeded. This flag accompanies all GC/MS tentatively identified compounds (TICs). This flag also applies to a suspected, unidentified interference. This flag is placed on affected detected results as well as non-detected (i.e., "U" flagged) results. ( <u>J</u> is the flag used in the Superfund CLP SOW and Data Review Functional Guidelines and is used by CRL for consistency.)
<b>M</b>	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, at or above the CRL <u>Method Detection Limit (MDL)</u> but below the CRL reporting limit (RL). This flag applies to all values in this concentration range and indicates the quantitated value is <u>estimated</u> due to its presence in this concentration range.
<b>N</b>	This flag applies to GC/MS <u>Tentatively Identified Compounds (TICs)</u> that have a mass spectral library match.
<b>Q</b>	This flag applies to analyte data that are severely estimated due to quality control and/or <u>Quantitation</u> problems, but are confirmed to be qualitatively present in the sample. <u>No value is reported with this qualification flag.</u>
<b>R</b>	This flag applies to analyte data that are <u>Rejected</u> and unusable due to severe quality control, quantitation and/or qualitative identification problems. No other qualification flags are reported for this analyte. <u>No value is reported with this qualification flag.</u>
<b>U</b>	This flag is used when the analyte was analyzed but <u>Undetected</u> in the sample. The CRL RL for the analyte accompanies this flag. As with sample results that are positive, the value is corrected for dry weight, dilution and/or sample weight or volume.

<u>Sampling Date</u>	<u>Concentrations (mg/L)</u>	<u>Type of Sample</u>	<u>Source</u>	<u>Test Method</u>	<u>Lab</u>
7/12/00	<b>5.29</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	0.08	Comp.	84" HSM	TCLP	CRL
7/12/00	0.03	Comp.	84" HSM	TCLP	CRL
7/12/00	0.04	Comp.	84" HSM	TCLP	CRL
7/12/00	0.28	Comp.	84" HSM	TCLP	CRL
7/12/00	0.34	Comp.	84" HSM	TCLP	CRL
7/12/00	0.73	Comp.	84" HSM	TCLP	CRL
7/12/00	3.30	Comp.	84" HSM	TCLP	CRL
7/12/00	1.27	Comp.	84" HSM	TCLP	CRL
7/12/00	2.70	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>5.30</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>6.51</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>7.56</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>8.08</b>	Comp.	84" HSM	TCLP	CRL

**Total Samples of Roll Shop Waste Analyzed by EPA for Chromium**

**LTV Steel Company  
East Chicago, Indiana**

<b><u>Sampling Date</u></b>	<b><u>Concentrations (mg/L)</u></b>	<b><u>Type of Sample</u></b>	<b><u>Source</u></b>	<b><u>Test Method</u></b>	<b><u>Lab</u></b>
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<b><u>Sampling Date</u></b>	<b><u>Concentrations (mg/L)</u></b>	<b><u>Type of Sample</u></b>	<b><u>Source</u></b>	<b><u>Test Method</u></b>	<b><u>Lab</u></b>
9/18/96	ND	Comp.	#2 TM	TCLP	NEIC
9/17/96	<b>21.8</b>	Comp.	84" HSM	TCLP	NEIC
9/17/96	4.7	Comp.	84" HSM	TCLP	NEIC
9/17/96	<b>11.3</b>	Comp.	84" HSM	TCLP	NEIC
9/17/96	<b>5.55</b>	Comp.	#3 SM	TCLP	NEIC
9/17/96	4.5	Comp.	#3 SM	TCLP	NEIC
9/17/96	4.05	Comp.	#3 SM	TCLP	NEIC
9/18/96	4.74	Comp.	#2 TM	TCLP	NEIC
9/18/96	<b>14.33</b>	Comp.	#2 TM	TCLP	NEIC
9/18/96	3.39	Comp.	#2 TM	TCLP	NEIC
9/18/96	1.28	Comp.	#2 TM	TCLP	NEIC
9/18/96	<b>7.66</b>	Comp.	#2 TM	TCLP	NEIC
7/12/00	0.03	Comp.	84" HSM	TCLP	CRL
7/12/00	0.03	Comp.	84" HSM	TCLP	CRL
7/12/00	0.03	Comp.	84" HSM	TCLP	CRL
7/12/00	0.17	Comp.	84" HSM	TCLP	CRL

Total Samples of Roll Shop Waste Analyzed by EPA for Chromium

LTV Steel Company  
East Chicago, Indiana

<u>Sampling Date</u>	<u>Concentrations (mg/L)</u>	<u>Type of Sample</u>	<u>Source</u>	<u>Test Method</u>	<u>Lab</u>
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9/18/96	ND	Comp.	#2 TM	TCLP	NEIC
9/17/96	<b>21.8</b>	Comp.	84" HSM	TCLP	NEIC
9/17/96	<b>4.7</b>	Comp.	84" HSM	TCLP	NEIC
9/17/96	<b>11.3</b>	Comp.	84" HSM	TCLP	NEIC
9/17/96	<b>5.55</b>	Comp.	#3 SM	TCLP	NEIC
9/17/96	<b>4.5</b>	Comp.	#3 SM	TCLP	NEIC
9/17/96	<b>4.05</b>	Comp.	#3 SM	TCLP	NEIC
9/18/96	<b>4.74</b>	Comp.	#2 TM	TCLP	NEIC
9/18/96	<b>14.33</b>	Comp.	#2 TM	TCLP	NEIC
9/18/96	<b>3.39</b>	Comp.	#2 TM	TCLP	NEIC
9/18/96	<b>1.28</b>	Comp.	#2 TM	TCLP	NEIC
9/18/96	<b>7.66</b>	Comp.	#2 TM	TCLP	NEIC
7/12/00	<b>0.03</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>0.03</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>0.03</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>0.17</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>5.29</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>0.08</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>0.03</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>0.04</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>0.28</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>0.34</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>0.73</b>	Comp.	84" HSM	TCLP	CRL

7/12/00	3.30	Comp.	84" HSM	TCLP	CRL
7/12/00	1.27	Comp.	84" HSM	TCLP	CRL
7/12/00	2.70	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>5.30</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>6.51</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>7.56</b>	Comp.	84" HSM	TCLP	CRL
7/12/00	<b>8.08</b>	Comp.	84" HSM	TCLP	CRL

TCLP  
if total ~~not~~ 2000 Oct 17

ENVIRONMENTAL PROTECTION AGENCY  
FOR THE TRAINEE METALS

901021D

DIVISION/BRANCH RCRA  
UU NUMBER 901021D

SAMPLING DATE 7-11-00 LAR ARRIVAL DATE 7/12/00 DUE DATE 8/28/00

DATA SET NUMBER 2000\_C047 STUDY LTV Steel PRIORITY N CONTRACTOR TBCH LAW

CAL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENTS SOLID S TOTAL ICAP **	SEDIMENTS SOLID S MG/KG (DRY WT.)	TBCH LAW TAG NUMBER				
200RC02S16	Swmu 45-SE	X				X		3250
200RC02S17	Swmu 45-E	X				X		3254
200RC02S18	Sumu 45-SW	X				X		3255
200RC02S19	Sumu 45-W	X				X		3257
200RC02S20	Swmu 50-W/NW	X				X		3259
2000RC02S21	Sumu 50-S/SE	X				X		3261
2000RC02S22	Sumu 50-N	X				X		3262
2000RC02S23	Sumu 50-N Tank	X				X		3263
2000RC02S24	Sumu 11-NE/SE	X				X		3264
2000RC02S25	Sumu 11-W	X				X		3265
2000RC02S26	Sumu 11-S	X				X		3266
2000RC02S27	Sumu 11-NE/NW	X				X		3267
2000RC02S28	Sumu 28/29-NE	X				X		3270
2000RC02S29	Sumu 28/29-SE/NE	X				X		3271
2000RC02S30	Sumu 28/29-N	X				X		3272
2000RC02D16	Sumu 45-SE Dup	X				X		3251
2000RC02B27	Post S27 Rinse	X				X		3268
2000RC02D29	Sumu 28/29-SE/NE	X				X		3274
	** RCRA-8 metals							
	* WATER/BLANK							

200000 47

901020

9/5/00

ENVIRONMENTAL PROTECTION AGENCY  
FOR THE TEAM 8 METALS

RGR A

VISION/HANCH RECH SAMPLING DATE 7-12-00 LAH ARRIVAL DATE 11/13/00 DUe DATE 01-11-01  
NUMBER 901020 DATASET NUMBER 20000047 STUDY LTV Steel PRIORITY N CONTRACTOR TechLew

US EPA CRL - Region V  
ICP Final Report Results  
TCLP Extracts

Sample Batch Number: 20000047      Study: LTV Steel  
Analysis Date: 29 Aug 00

Sample ID	Station ID	Analyte	Concentration	Units
2000RC02S32	D1	Cr	0.03 U,D	mg/L
2000RC02S33	E3	Cr	0.03 U,D	mg/L
2000RC02S34	A3	Cr	0.03 U,D	mg/L
2000RC02S35	A4	Cr	0.17 D	mg/L
2000RC02S36	A5	Cr	5.29 D	mg/L
2000RC02S37	B4	Cr	0.08 D	mg/L
2000RC02S38	B3	Cr	0.03 U,D	mg/L
2000RC02D38	B3	Cr	0.04 D	mg/L
2000RC02S39	C2	Cr	0.28 D	mg/L
2000RC02S40	C3	Cr	0.34 D	mg/L
2000RC02S41	C4	Cr	0.73 D	mg/L
2000RC02D41	C4	Cr	3.30 D	mg/L
2000RC02S42	C5	Cr	1.27 D	mg/L
2000RC02S43	C6	Cr	2.70 D	mg/L
2000RC02S44	D3	Cr	5.30 D	mg/L
2000RC02S45	D4	Cr	6.51 D	mg/L
2000RC02S46	D5	Cr	7.56 D	mg/L
2000RC02S47	D6	Cr	8.08 D	mg/L

JW  
8 Sept 00

US EPA CRL - Region V  
ICP Final Report Results  
TCLP Extracts

Sample Batch Number: Analysis Date:			20000047 30 Aug 00	Study:	LTV Steel
Sample ID	Station ID	Analyte	Concentration	Units	
2000RC02S16	SWMU45-SE	Cr	0.03 U,D	mg/L	
		Pb	0.10 U,D	mg/L	
2000RC02D16	SWMU45SED	Cr	0.03 U,D	mg/L	
		Pb	0.10 U,D	mg/L	
2000RC02S17	SWMU45-E	Cr	0.03 U,D	mg/L	
		Pb	0.10 U,D	mg/L	
2000RC02S19	SWMU45-W	Cr	0.03 U,D	mg/L	
		Pb	0.10 U,D	mg/L	
2000RC02S20	SWMU50-WNW	Cr	0.03 U,D	mg/L	
		Pb	0.10 U,D	mg/L	
2000RC02S21	SWMU50-SSE	Cr	0.03 U,D	mg/L	
		Pb	0.10 U,D	mg/L	
2000RC02S22	SWMU50-N	Cr	0.03 U,D	mg/L	
		Pb	0.10 U,D	mg/L	
2000RC02S24	SWMU11-NE/SE	Cr	0.03 U,D	mg/L	
		Pb	0.10 U,D	mg/L	
2000RC02S25	SWMU11-N	Cr	0.03 U,D	mg/L	
		Pb	0.10 U,D	mg/L	
2000RC02S26	SWMU11-S	Cr	0.03 U,D	mg/L	
		Pb	0.10 U,D	mg/L	
2000RC02S27	SWMU11-NE/NW	Cr	0.03 U,D	mg/L	
		Pb	0.10 U,D	mg/L	
2000RC02S29	SWMU28/29-SE/NE	Cr	0.03 U,D	mg/L	
		Pb	0.10 U,D	mg/L	
2000RC02D29	SWMU28/29-SE/NE	Cr	0.03 U,D	mg/L	
		Pb	0.10 U,D	mg/L	
2000RC02S30	SWMU28/29-N	Cr	0.03 U,D	mg/L	
		Pb	0.10 U,D	mg/L	

JUN  
8 Sept 00



200000 47

90702 D

RCRA

ENVIRONMENTAL PROTECTION AGENCY  
FOR THE TEAM: METALS

VISION/HANCH KCKA SAMPLING DATE 7-12-00 LAB ARRIVAL DATE 7/13/00 DUE DATE 8/7/00  
NUMBER 901020 DATASET NUMBER 2000047 STUDY LTV Steel PRIORITY N CONTRACTOR TechLaw

9/5/00

~~8/27/00~~

L LOG NUMBER	SAMPLE DESCRIPTION	MATRIX TEST TOEFL UNITS... ME1235826	Sludge TEST NGL 3089
DRC02S33	D1	X	3089
DRC02S33	E3	X	3090
DRC02S34	A3	X	3091
DRC02S35	A4	X	3092
DRC02S36	A5	X	3093
DRC02S37	B4	G	3094
DRC02S38	B3	X	RUN N
DRC02D38	B3	X	3096
DRL02S39	C2	X	3098
DRC02S46	C3	X	3099
DRC02S41	C4	X	3100
DRC02D41	C4	X	3101
DRC02S42	C5	X	3102
DRC02S43	C6	X	3103
D00RCD02S44	D3	X	3104
DRC02S45	D4	X	3105
D00RCL02S46	D5	X	3106
D00RCL02S47	D6	X	3107



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: AUG 17 2000

Subject: Review of Region 5 Data for LTV STEEL  
From: Babu Paruchuri, Chemist *BP*  
Region 5 Central Regional Laboratory

To: Brian Freeman  
*DE - 9J*

Attached are the results for Site: LTV STEEL

CRL Data Set Number: 20000047

for analyses of : ABNs

Results are reported for sample numbers: (List of sample numbers) 2000RC02S01- S06, -D05 and -R03 (Eight Water Samples)

Results Status:

- (X) Acceptable for Use for all site samples except 2000RC02S02.
- (X) Data Qualified, but Acceptable for use for the field sample 2000RC02S02.
- (X) Data Unacceptable for Use for 3,3'-dichlorobenzidine.

Attached are the **draft** data for the above site samples.

*Sylvia Griffin*

AUG 17 2000

CRL Data Management Coordinator and Date Received

AUG 17 2000

Date Transmitted: \_\_\_\_\_

Please have the US EPA project leader fill out the customer survey form on the Region 5 Intranet:  
<http://www.r5intra.epa.gov/crl/qa.html>, (← by clicking on this link, or call George Schupp, CRL Sample Coordinator, at 3-1226).

Please sign and date this form below and return it with any comments to:

Sylvia Griffin  
Data Management Coordinator  
Region 5 Central Regional Laboratory  
ML - 10C

---

Received by and Date

Comments:

*Former  
COKE  
Hydro punch*

20000047

90102 D

# **ENVIRONMENTAL PROTECTION AGENCY FOR THE TEAM: TOXIC SUBSTANCES**

DIVISION/BRANCH R CRA

**SAMPLE DATE** 7/11/00

**LAB ARRIVAL DATE**

7/12/00 DUE DATE 8/28/00

DIVISION/BRANCH \_\_\_\_\_  
DU NUMBER 907028

DATA SET NUMBER 2000  
CW47

200  
584

**STUDY** LTV STB82

PRIORITY

CONTRACTOR TECHLAW

1B  
SEMICVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**Lab Blank**

Lab Name:	LTV STEEL	Contract:	ML-10C
Lab Code:	USEPA-R5	Case No.:	20000047
Matrix (soil/water)	WATER	Lab Sample ID:	LAB BLANK
Sample wt/vol:	1000 (g/ml)	Lab File ID:	2C072807.D
Level (low/med)	LOW	Date Received:	7/14/00
% Moisture:		Date Extracted:	07/14/00
Concentrated Extract Volume:	1000 (uL)	Date Analyzed:	07/28/00
Injection Volume:	1.0 (uL)	Dilution Factor:	1.0
GPC Cleanup: (Y/N)	N	pH:	

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
111-44-4	bis(2-Chloroethyl)ether	5	UJ	
108-95-2	Phenol	5	U	
95-57-8	2-Chlorophenol	5	U	
541-73-1	1,3-Dichlorobenzene	5	UJ	
106-46-7	1,4-Dichlorobenzene	5	UJ	
95-50-1	1,2-Dichlorobenzene	5	UJ	
100-51-6	Benzyl alcohol	5	UJ	
105-48-7	2-Methylphenol	5	U	
106-44-5	4-Methylphenol	5	U	
108-60-1	bis(2-chloroisopropyl)ether	5	UJ	
127-72-1	Hexachloroethane	5	UJ	
121-64-7	N-Nitroso-di-n-propylamine	5	UJ	
108-95-3	Nitrobenzene	5	UJ	
108-59-1	Isophorone	5	UJ	
108-75-5	2-Nitrophenol	5	U	
105-67-9	2,4-Dimethylphenol	5	U	
105-80-0	Benzoic acid	5	UJ	
111-91-1	bis(2-Chloroethoxy)methane	5	UJ	
120-83-2	2,4-Dichlorophenol	5	U	
120-82-1	1,2,4-Trichlorobenzene	5	UJ	
121-20-3	Naphthalene	5	UJ	
106-47-8	4-Chloroaniline	5	UJ	
121-68-3	Hexachlorobutadiene	5	UJ	
121-50-7	4-Chloro-3-methylphenol	5	U	
121-57-6	2-Methylnaphthalene	5	UJ	
121-47-4	Hexachlorocyclopentadiene	5	UJ	
121-06-2	2,4,6-Trichlorophenol	5	U	
121-95-4	2,4,5-Trichlorophenol	20	U	
121-58-7	2-Chloronaphthalene	5	UJ	
121-74-4	2-Nitroaniline	5	UJ	
121-89-8	Acenaphthylene	5	UJ	
121-11-3	Dimethylphthalate	5	UJ	
121-20-2	2,6-Dinitrotoluene	5	UJ	
121-32-9	Acenaphthene	5	UJ	
121-09-2	3-Nitroaniline	20	UJ	
121-28-5	2,4-Dinitrophenol	20	UJ	
121-64-9	Dibenzofuran	5	UJ	

1C  
SEMICVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**Lab Blank**

Lab Name: LTV STEEL

Contract: ML-10C

Lab Code: USEPA-R5

Case No.: 20000047

SAS No.:

SDG No.: GCMS026

Matrix: (soil/water) WATER

Lab Sample ID: LAB BLANK

Sample wt/vol: 1000 (g/ml) ML

Lab File ID: 2C072807.D

Level: (low/med) LOW

Date Received: 7/14/00

% Moisture: decanted:(Y/N) N

Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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121-14-2	2,4-Dinitrotoluene	5	U ✓
100-02-7	4-Nitrophenol	5	U
86-73-7	Fluorene	5	U ✓
7005-72-3	4-Chlorophenyl-phenylether	5	U ✓
84-66-2	Diethylphthalate	5	U ✓
100-01-6	4-Nitroaniline	20	U ✓
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	n-Nitrosodiphenylamine	5	U ✓
101-55-3	4-Bromophenyl-phenylether	5	U ✓
118-74-1	Hexachlorobenzene	5	U ✓
87-86-5	Pentachlorophenol	5	U
85-01-8	Phenanthrene	5	U ✓
120-12-7	Anthracene	5	U ✓
86-74-8	Carbazole	5	U ✓
84-74-2	Di-n-butylphthalate	5	U ✓
206-44-0	Fluoranthene	5	U ✓
129-00-0	Pyrene	5	U ✓
85-68-7	Butylbenzylphthalate	5	U ✓
91-94-1	3,3'-Dichlorobenzidine		UR
56-55-3	Benzo[a]anthracene	5	U ✓
218-01-9	Chrysene	5	U ✓
117-81-7	bis(2-Ethylhexyl)phthalate	2	J
117-84-0	Di-n-octylphthalate	5	U ✓
205-99-2	Benzo[b]fluoranthene	5	U ✓
207-08-9	Benzo[k]fluoranthene	5	U ✓
50-32-8	Benzo[a]pyrene	5	U ✓
193-39-5	Indeno[1,2,3-cd]pyrene	5	U ✓
53-70-3	Dibenz[a,h]anthracene	5	U ✓
191-24-2	Benzo[g,h,i]perylene	5	U ✓

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET      EPA SAMPLE NO.  
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	LTV STEEL	Contract:	ML-10C	<b>Lab Blank</b>
Lab Code:	USEPA-R5	Case No.:	20000047	SAS No.: SDG No.: GCMS026
Matrix: (soil/water)	WATER	Lab Sample ID: LAB BLANK		
Sample wt/vol:	1000	(g/ml)	ML	Lab File ID: 2C072807.D
Level: (low/med)	LOW	Date Received: 7/19/00		
% Moisture:		decanted: (Y/N)	N	Date Extracted: 07/14/00
Concentrated Extract Volume:	1000	(uL)		Date Analyzed: 07/28/00
Injection Volume:	1.0	(uL)		Dilution Factor: 1.0
GPC Cleanup: (Y/N)	N	pH:		

CONCENTRATION UNITS:

Number TICs found: 0      (ug/L or ug/Kg)      UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1B  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC03R03**

Lab Name:	LTV STEEL	Contract:	ML-10C
Lab Code:	USEPA-R5	Case No.:	20000047
Matrix: (soil/water)	WATER	Lab Sample ID:	2000RC02R03
Sample wt/vol:	1000 (g/ml)	Lab File ID:	2C072808.D
Level: (low/med)	LOW	Date Received:	7/12/00
% Moisture:	decanted:(Y/N) N	Date Extracted:	07/14/00
Concentrated Extract Volume:	1000 (uL)	Date Analyzed:	07/28/00
Injection Volume:	1.0 (uL)	Dilution Factor:	1.0
GPC Cleanup: (Y/N)	N	pH:	

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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111-44-4	bis(2-Chloroethyl)ether	5	U
108-95-2	Phenol	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	3	J
100-51-6	Benzyl alcohol	5	U
95-48-7	2-Methylphenol	5	U
106-44-5	4-Methylphenol	5	U
108-60-1	bis(2-chloroisopropyl)ether	5	U
67-72-1	Hexachloroethane	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-80-0	Benzoic acid	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	5	U
208-96-8	Acenaphthylene	5	U
131-11-3	Dimethylphthalate	5	U
606-20-2	2,6-Dinitrotoluene	5	U
83-32-9	Acenaphthene	5	U
99-09-2	3-Nitroaniline	20	U
51-28-5	2,4-Dinitrophenol	20	U
132-64-9	Dibenzofuran	5	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2000RC03R03

Lab Name: LTV STEEL Contract: ML-10C  
Lab Code: USEPA-R5 Case No.: 20000047 SAS No.: SDG No.: GCMS026  
Matrix: (soil/water) WATER Lab Sample ID: 2000RC02R03  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2C072808.D  
Level: (low/med) LOW Date Received: 7/12/00  
% Moisture: decanted:(Y/N) N Date Extracted: 07/14/00  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/00  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH:

## CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
121-14-2	2,4-Dinitrotoluene	5	U	
100-02-7	4-Nitrophenol	5	U	
86-73-7	Fluorene	5	U	
7005-72-3	4-Chlorophenyl-phenylether	5	U	
84-66-2	Diethylphthalate	5	U	
100-01-6	4-Nitroaniline	20	U	
534-52-1	4,6-Dinitro-2-methylphenol	20	U	
86-30-6	n-Nitrosodiphenylamine	5	U	
101-55-3	4-Bromophenyl-phenylether	5	U	
118-74-1	Hexachlorobenzene	5	U	
87-86-5	Pentachlorophenol	5	U	
85-01-8	Phenanthrene	5	U	
120-12-7	Anthracene	5	U	
86-74-8	Carbazole	5	U	
34-74-2	Di-n-butylphthalate	5	U	
206-44-0	Fluoranthene	5	U	
129-00-0	Pyrene	5	U	
35-68-7	Butylbenzylphthalate	5	U	
91-94-1	3,3'-Dichlorobenzidine			UR
56-55-3	Benzo[a]anthracene	5	U	
118-01-9	Chrysene	5	U	
117-81-7	bis(2-Ethylhexyl)phthalate	5	U	
117-84-0	Di-n-octylphthalate	5	U	
105-99-2	Benzo[b]fluoranthene	5	U	
107-08-9	Benzo[k]fluoranthene	5	U	
130-32-8	Benzo[a]pyrene	5	U	
193-39-5	Indeno[1,2,3-cd]pyrene	5	U	
133-70-3	Dibenz[a,h]anthracene	5	U	
191-24-2	Benzo[g,h,i]perylene	5	U	

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET      EPA SAMPLE NO.  
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: LTV STEEL      Contract: ML-10C      2000RC03R03

Lab Code: USEPA-R5      Case No.: 20000047      SAS No.:       SDG No.: GCMS026

Matrix: (soil/water) WATER      Lab Sample ID: 2000RC02R03

Sample wt/vol: 1000 (g/ml) ML      Lab File ID: 2C072808.D

Level: (low/med) LOW      Date Received: 7/12/00

% Moisture:       decanted: (Y/N) N      Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL)      Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL)      Dilution Factor: 1.0

GPC Cleanup: (Y/N) N      pH:

CONCENTRATION UNITS:

Number TICs found: 0      (ug/L or ug/Kg)      UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1B  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2000RC02S01

Lab Name: LTV STEEL

Contract: ML-10C

Lab Code: USEPA-R5

Case No.: 20000047

SAS No.:

SDG No.: GCMS026

Matrix (soil/water) WATER

Lab Sample ID: 2000RC02S01

Sample wt/vol: 990 (g/ml) ML

Lab File ID: 2C072809.D

Level (low/med) LOW

Date Received: 7/12/00

For storage tank #1

% Moisture: decanted:(Y/N) N

Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

## CONCENTRATION UNITS:

AS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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11-44-4	bis(2-Chloroethyl)ether	5	U	
08-95-2	Phenol	5	U	
55-57-8	2-Chlorophenol	5	U	
141-73-1	1,3-Dichlorobenzene	5	U	
106-46-7	1,4-Dichlorobenzene	5	U	
105-50-1	1,2-Dichlorobenzene	2	J	
100-51-6	Benzyl alcohol	5	U	
105-48-7	2-Methylphenol	2	J	
106-44-5	4-Methylphenol	5	U	
108-60-1	bis(2-chloroisopropyl)ether	5	U	
107-72-1	Hexachloroethane	5	U	
121-64-7	N-Nitroso-di-n-propylamine	5	U	
103-95-3	Nitrobenzene	5	U	
103-59-1	Isophorone	5	U	
103-75-5	2-Nitrophenol	5	U	
105-67-9	2,4-Dimethylphenol	5		
103-80-0	Benzoic acid	5	U	ED
101-91-1	bis(2-Chloroethoxy)methane	5	U	
100-83-2	2,4-Dichlorophenol	5	U	
100-82-1	1,2,4-Trichlorobenzene	5	U	
100-20-3	Naphthalene	380	290	ED
100-47-8	4-Chloroaniline	5	U	
100-68-3	Hexachlorobutadiene	5	U	
100-50-7	4-Chloro-3-methylphenol	5	U	
100-57-6	2-Methylnaphthalene	3	J	
100-47-4	Hexachlorocyclopentadiene	5	U	
100-06-2	2,4,6-Trichlorophenol	5	U	
100-95-4	2,4,5-Trichlorophenol	20	U	
100-58-7	2-Choronaphthalene	5	U	
100-74-4	2-Nitroaniline	5	U	
100-96-8	Acenaphthylene	12		
100-11-3	Dimethylphthalate	5	U	
100-20-2	2,6-Dinitrotoluene	5	U	
100-32-9	Acenaphthene	62		
100-09-2	3-Nitroaniline	20	U	
100-28-5	2,4-Dinitrophenol	20	U	ED
100-64-9	Dibenzofuran	7		

## SEMOVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2000RC02S01

Lab Name: LTV STEEL Contract: ML-10C  
 Lab Code: USEPA-R5 Case No.: 20000047 SAS No.: SDG No.: GCMS026  
 Matrix: (soil/water) WATER Lab Sample ID: 2000RC02S01  
 Sample wt/vol: 990 (g/ml) ML Lab File ID: 2C072809.D  
 Level: (low/med) LOW Date Received: 7/12/00  
 % Moisture: decanted:(Y/N) N Date Extracted: 07/14/00  
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/00  
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
121-14-2	2,4-Dinitrotoluene	16		
100-02-7	4-Nitrophenol	5	U	
36-73-7	Fluorene	16		
7005-72-3	4-Chlorophenyl-phenylether	5	U	
34-66-2	Diethylphthalate	5	U	
100-01-6	4-Nitroaniline	20	U	
534-52-1	4,6-Dinitro-2-methylphenol	20	U	
36-30-6	n-Nitrosodiphenylamine	5	U	
101-55-3	4-Bromophenyl-phenylether	5	U	
118-74-1	Hexachlorobenzene	5	U	
37-86-5	Pentachlorophenol	5	U	
35-01-8	Phenanthrene	7		
120-12-7	Anthracene	5	U	
36-74-8	Carbazole	20		
34-74-2	Di-n-butylphthalate	5	U	
206-44-0	Fluoranthene	5	U	
29-00-0	Pyrene	5	U	
35-68-7	Butylbenzylphthalate	5	U	
31-94-1	3,3'-Dichlorobenzidine	5	UR	
36-55-3	Benzo[a]anthracene	5	U	
318-01-9	Chrysene	5	U	
317-81-7	bis(2-Ethylhexyl)phthalate	6	B	
317-84-0	Di-n-octylphthalate	5	U	
305-99-2	Benzo[b]fluoranthene	5	U	
307-08-9	Benzo[k]fluoranthene	5	U	
310-32-8	Benzo[a]pyrene	5	U	
319-39-5	Indeno[1,2,3-cd]pyrene	5	U	
313-70-3	Dibenz[a,h]anthracene	5	U	
319-24-2	Benzo[g,h,i]perylene	5	U	

1F  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET      EPA SAMPLE NO.  
 TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	LTV STEEL	Contract:	ML-10C	2000RC02S01
Lab Code:	USEPA-R5	Case No.:	20000047	SDG No.: GCMS026
Matrix: (soil/water)	WATER	Lab Sample ID:	2000RC02S01	
Sample wt/vol:	990 (g/ml) ML	Lab File ID:	2C072809.D	
Level: (low/med)	LOW	Date Received:	7/12/00	
% Moisture:	decanted: (Y/N) N	Date Extracted:	07/14/00	
Concentrated Extract Volume:	1000 (uL)	Date Analyzed:	07/28/00	
Injection Volume:	1.0 (uL)	Dilution Factor:	1.0	
GCPC Cleanup: (Y/N)	N	pH:		

CONCENTRATION UNITS:

Number TICs found: 8 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000095-13-6	1H-Indene (CAS) \$\$ Inden \$\$ Ind	9.09	27	JN
2. 000086-55-5	1-Naphthalenecarboxylic acid (C	18.76	8	JN
3. 000000-00-0	2-Hydroxyfluorene	21.66	14	JN
4. 000321-64-2	Tacrine \$\$ 9-Acridinamine, 1,2,3,	22.24	8	JN
5. 000081-84-5	1H,3H-Naphtho[1,8-cd]pyran-1,3-	22.87	47	JN
6. 000081-83-4	1H-Benz[de]isoquinoline-1,3(2H)-	23.43	14	JN
7.	unknown	24.48	6	J
8. 000000-00-0	8-methyl-4-azafluorenone	24.79	15	JN

1B  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S02**

Lab Name: **LTV STEEL**

Contract: **ML-10C**

Lab Code: **USEPA-R5** Case No.: **20000047** SAS No.: **SDG No.: GCMS026**

Matrix: (soil/water) **WATER**

Lab Sample ID: **2000RC02S02**

Sample wt/vol: **980** (g/ml) **ML**

Lab File ID: **2C072810.D**

Level: (low/med) **LOW**

Date Received: **7/12/00**

% Moisture: \_\_\_\_\_ decanted:(Y/N) **N**

Date Extracted: **07/14/00**

Concentrated Extract Volume: **1000** (uL)

Date Analyzed: **07/28/00**

Injection Volume: **1.0** (uL)

Dilution Factor: **1.0**

GPC Cleanup: (Y/N) **N** pH: \_\_\_\_\_

*Tar storage tank  
#2*

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
111-44-4	bis(2-Chloroethyl)ether	5	U J	
108-95-2	Phenol	120	E D	
95-57-8	2-Chlorophenol	5	U J	
541-73-1	1,3-Dichlorobenzene	5	U J	
106-46-7	1,4-Dichlorobenzene	5	U J	
95-50-1	1,2-Dichlorobenzene	5	U J	
100-51-6	Benzyl alcohol	5	U J	
95-48-7	2-Methylphenol	32		
106-44-5	4-Methylphenol	88		
108-60-1	bis(2-chloroisopropyl)ether	5	U J	
67-72-1	Hexachloroethane	5	U J	
621-64-7	N-Nitroso-di-n-propylamine	5	U J	
98-95-3	Nitrobenzene	5	U J	
78-59-1	Isophorone	5	U J	
88-75-5	2-Nitrophenol	5	U J	
105-67-9	2,4-Dimethylphenol	19		
65-80-0	Benzoic acid	5	U J	
111-91-1	bis(2-Chloroethoxy)methane	5	U J	
120-83-2	2,4-Dichlorophenol	5	U J	
120-82-1	1,2,4-Trichlorobenzene	5	U J	
91-20-3	Naphthalene	1700 000	E D	
106-47-8	4-Chloroaniline	5	U J	
87-68-3	Hexachlorobutadiene	5	U J	
59-50-7	4-Chloro-3-methylphenol	5	U J	
91-57-6	2-Methylnaphthalene	39		
77-47-4	Hexachlorocyclopentadiene	5	U J	
38-06-2	2,4,6-Trichlorophenol	2	J	
95-95-4	2,4,5-Trichlorophenol	20	U J	
91-58-7	2-Chloronaphthalene	5	U J	
38-74-4	2-Nitroaniline	5	U J	
208-96-8	Acenaphthylene	84		
131-11-3	Dimethylphthalate	5	U J	
606-20-2	2,6-Dinitrotoluene	5	U J	
83-32-9	Acenaphthene	22		
99-09-2	3-Nitroaniline	20	U J	
51-28-5	2,4-Dinitrophenol	20	U J	
132-64-9	Dibenzofuran	13		

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S02**

Lab Name: LTV STEEL Contract: ML-10C

Lab Code: USEPA-R5 Case No.: 20000047 SAS No.:  SDG No.: GCMS026

Matrix: (soil/water) WATER Lab Sample ID: 2000RC02S02

Sample wt/vol: 980 (g/ml) ML Lab File ID: 2C072810.D

Level: (low/med) LOW Date Received: 7/13/00

% Moisture: \_\_\_\_\_ decanted:(Y/N) N Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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121-14-2	2,4-Dinitrotoluene	5	U J
100-02-7	4-Nitrophenol	5	U J
86-73-7	Fluorene	16	
7005-72-3	4-Chlorophenyl-phenylether	5	U J
84-66-2	Diethylphthalate	5	U J
100-01-6	4-Nitroaniline	20	U J
534-52-1	4,6-Dinitro-2-methylphenol	20	U J
86-30-6	n-Nitrosodiphenylamine	5	U J
101-55-3	4-Bromophenyl-phenylether	5	U J
118-74-1	Hexachlorobenzene	5	U J
87-86-5	Pentachlorophenol	16	
85-01-8	Phenanthrene	14	
120-12-7	Anthracene	5	J
86-74-8	Carbazole	75	
84-74-2	Di-n-butylphthalate	5	U J
206-44-0	Fluoranthene	6	
129-00-0	Pyrene	4	J
85-68-7	Butylbenzylphthalate	5	U J
91-94-1	3,3'-Dichlorobenzidine	5	U R
56-55-3	Benzo[a]anthracene	5	U J
218-01-9	Chrysene	5	U J
117-81-7	bis(2-Ethylhexyl)phthalate	5	U J
117-84-0	Di-n-octylphthalate	5	U J
205-99-2	Benzo[b]fluoranthene	5	U J
207-08-9	Benzo[k]fluoranthene	5	U J
50-32-8	Benzo[a]pyrene	5	U J
193-39-5	Indeno[1,2,3-cd]pyrene	5	U J
53-70-3	Dibenz[a,h]anthracene	5	U J
191-24-2	Benzo[g,h,i]perylene	5	U J

88 8/17/00

## SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

## TENTATIVELY IDENTIFIED COMPOUNDS

2000RC02S02

Lab Name: LTV STEEL Contract: ML-10C

Lab Code: USEPA-R5 Case No.: 20000047 SAS No.: SDG No.: GCMS026

Matrix: (soil/water) WATER Lab Sample ID: 2000RC02S02

Sample wt/vol: 980 (g/ml) ML Lab File ID: 2C072810.D

Level: (low/med) LOW Date Received: 7/12/00

% Moisture: decanted: (Y/N) N Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

QPC Cleanup: (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS:

Number TICs found: 10 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000095-13-6	1H-Indene (CAS) \$\$ Inden \$\$ Ind	9.10	51	JN
2. 000086-55-5	1-Naphthalenecarboxylic acid (C	18.84	30	JN
3. 002439-04-5	5-Isoquinolinol \$\$ 5-Hydroxyisoq	19.47	72	JN
4.	unknown	19.83	76	J
5. 000086-77-1	2-Dibenzofuranol (CAS) \$\$ 2-Hyd	20.95	30	JN
6. 000086-77-1	2-Dibenzofuranol (CAS) \$\$ 2-Hyd	21.07	35	JN
7. 000000-00-0	2-Hydroxyfluorene	21.70	30	JN
8. 000081-84-5	1H,3H-Naphtho[1,8-cd]pyran-1,3-	23.04	360	JN
9. 000081-83-4	1H-Benz[de]isoquinoline-1,3(2H)-	23.56	36	JN
10. 000235-98-3	phenanthro[9,10-b]furan	26.46	18	JN

1B  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S03**

Lab Name:	LTV STEEL	Contract:	ML-10C
Lab Code:	USEPA-R5	Case No.:	20000047
Matrix: (soil/water)	WATER	SDG No.:	GCMS026
Sample wt/vol:	950 (g/ml)	Lab Sample ID:	2000RC02S03
Level: (low/med)	LOW	Lab File ID:	2C072811.D
% Moisture:	decanted:(Y/N) N	Date Received:	7/12/00
Concentrated Extract Volume:	1000 (uL)	Date Extracted:	07/14/00
Injection Volume:	1.0 (uL)	Date Analyzed:	07/28/00
GPC Cleanup: (Y/N)	N	Dilution Factor:	1.0
pH: _____			

*Equipment shed maintenance*

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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111-44-4	bis(2-Chloroethyl)ether	5	U
108-95-2	Phenol	2	J
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	2	J
100-51-6	Benzyl alcohol	5	U
95-48-7	2-Methylphenol	5	U
106-44-5	4-Methylphenol	5	U
108-60-1	bis(2-chloroisopropyl)ether	5	U
67-72-1	Hexachloroethane	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-80-0	Benzoic acid	5	UJ
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	3	J
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	21	U
91-58-7	2-Choronaphthalene	5	U
88-74-4	2-Nitroaniline	5	U
208-96-8	Acenaphthylene	5	U
131-11-3	Dimethylphthalate	5	U
606-20-2	2,6-Dinitrotoluene	5	U
83-32-9	Acenaphthene	4	J
99-09-2	3-Nitroaniline	21	U
51-28-5	2,4-Dinitrophenol	21	U
132-64-9	Dibenzofuran	6	

1C  
SEMICVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S03**

Lab Name:	LTV STEEL	Contract:	ML-10C
Lab Code:	USEPA-R5	Case No.:	20000047
Matrix: (soil/water)	WATER	SDG No.:	GCMS026
Sample wt/vol:	950 (g/ml)	Lab Sample ID:	2000RC02S03
Level: (low/med)	LOW	Lab File ID:	2C072811.D
% Moisture:		Date Received:	7/12/00
Concentrate Extract Volume:	1000 (uL)	Date Extracted:	07/14/00
Injection Volume:	1.0 (uL)	Date Analyzed:	07/28/00
GPC Cleaning: (Y/N)	N	Dilution Factor:	1.0
pH:			

CONCENTRATION UNITS:

CAS N°	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
121-14-2	2,4-Dinitrotoluene	5	U	
100-52-7	4-Nitrophenol	5	U	
86-73-7	Fluorene	12		
7005-72-3	4-Chlorophenyl-phenylether	5	U	
84-66-2	Diethylphthalate	5	U	
100-61-6	4-Nitroaniline	21	U	
534-52-1	4,6-Dinitro-2-methylphenol	21	U	
86-39-6	n-Nitrosodiphenylamine	5	U	
101-55-3	4-Bromophenyl-phenylether	5	U	
118-74-1	Hexachlorobenzene	5	U	
87-86-5	Pentachlorophenol	5	U	
85-01-8	Phenanthrene	2	J	
120-12-7	Anthracene	3	J	
86-74-8	Carbazole	4	J	
84-74-2	Di-n-butylphthalate	5	U	
206-44-0	Fluoranthene	25		
129-00-0	Pyrene	14		
85-65-7	Butylbenzylphthalate	5	U	
91-94-1	3,3'-Dichlorobenzidine	5	UP	
56-55-3	Benzo[a]anthracene	3	J	
218-61-9	Chrysene	2	J	
117-61-7	bis(2-Ethylhexyl)phthalate	5	U	
117-64-0	Di-n-octylphthalate	5	U	
205-99-2	Benzo[b]fluoranthene	5	U	
207-68-9	Benzo[k]fluoranthene	5	U	
50-32-8	Benzo[a]pyrene	5	U	
193-39-5	Indeno[1,2,3-cd]pyrene	5	U	
53-79-3	Dibenz[a,h]anthracene	5	U	
191-24-2	Benzo[g,h,i]perylene	5	U	

1F  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET      EPA SAMPLE NO.  
 TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	LTV STEEL	Contract:	ML-10C	2000RC02S03
Lab Code:	USEPA-R5	Case No.:	20000047	SAS No.: SDG No.: GCMS026
Matrix: (soil/water)	WATER	Lab Sample ID:	2000RC02S03	
Sample wt/vol:	950 (g/ml)	ML	Lab File ID:	2C072811.D
Level: (low/med)	LOW	Date Received:	7/12/00	
% Moisture:		decanted: (Y/N)	N	Date Extracted: 07/14/00
Concentrated Extract Volume:	1000 (uL)	Date Analyzed:	07/28/00	
Injection Volume:	1.0 (uL)	Dilution Factor:	1.0	
GPC Cleanup: (Y/N)	N	pH:		

CONCENTRATION UNITS:

Number TICs found: 9 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 032267-71-3	2(3H)-Benzofuranone, 3-methyl-	13.89	30	JN
2. 000093-35-6	2H-1-Benzopyran-2-one, 7-hydro	15.51	10	JN
3. 000050-84-0	Benzoic acid, 2,4-dichloro- (CAS)	16.68	5	JN
4. 089185-31-9	1,2-dihydrocyclobuta[b]naphthale	18.68	59	JN
5. 000486-25-9	9H-Fluoren-9-one (CAS) \$\$ Fluor	19.62	8	JN
6. 000203-64-5	4H-Cyclopenta[def]phenanthrene	21.71	6	JN
7. 000057-10-3	Hexadecanoic acid (CAS) \$\$ Pal	22.02	5	JN
8. 000081-84-5	1H,3H-Naphtho[1,8-cd]pyran-1,3-	22.95	6	JN
9. 004540-48-1	3,4,5,6-tetramethylphthalic acid a	28.59	42	JN

UNKNOWNS

13.00-33.00

19.00

J

1B  
SEMICVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S04**

Lab Name:	LTV STEEL	Contract:	ML-10C
Lab Code:	USEPA-R5	Case No.:	20000047
Matrix: (soil/water)	WATER	Lab Sample ID:	2000RC02S04
Sample wt/vol:	960 (g/ml)	Lab File ID:	2C072812.D
Level: (low/med)	LOW	Date Received:	7/12/00
% Moisture:	decanted:(Y/N) N	Date Extracted:	07/14/00
Concentrated Extract Volume:	1000 (uL)	Date Analyzed:	07/29/00
Injection Volume:	1.0 (uL)	Dilution Factor:	1.0
GPC Cleanup: (Y/N)	N	pH:	

*North decanter tank*

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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111-44-4	bis(2-Chloroethyl)ether	5	U
108-95-2	Phenol	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	3	J
100-51-6	Benzyl alcohol	5	U
95-48-7	2-Methylphenol	5	U
106-44-5	4-Methylphenol	5	U
108-60-1	bis(2-chloroisopropyl)ether	5	U
67-72-1	Hexachloroethane	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-80-0	Benzoic acid	5	U J
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	13	
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
38-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	21	U
91-58-7	2-Chloronaphthalene	5	U
38-74-4	2-Nitroaniline	5	U
208-96-8	Acenaphthylene	5	U
131-11-3	Dimethylphthalate	5	U
606-20-2	2,6-Dinitrotoluene	5	U
33-32-9	Acenaphthene	3	J
99-09-2	3-Nitroaniline	21	U
51-28-5	2,4-Dinitrophenol	21	U J
132-64-9	Dibenzofuran	3	J

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

2000RC02S04

Lab Name: LTV STEEL Contract: ML-10C

Lab Code: USEPA-R5 Case No.: 20000047 SAS No.: SDG No.: GCMS026

Matrix: (soil/water) WATER Lab Sample ID: 2000RC02S04

Sample wt/vol: 960 (g/ml) ML Lab File ID: 2C072812.D

Level: (low/med) LOW Date Received: 7/12/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

## CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
121-14-2	2,4-Dinitrotoluene	5	U	
100-02-7	4-Nitrophenol	5	U	
86-73-7	Fluorene	4	J	
7005-72-3	4-Chlorophenyl-phenylether	5	U	
84-66-2	Diethylphthalate	5	U	
100-01-6	4-Nitroaniline	21	U	
534-52-1	4,6-Dinitro-2-methylphenol	21	U	
86-30-6	n-Nitrosodiphenylamine	5	U	
101-55-3	4-Bromophenyl-phenylether	5	U	
118-74-1	Hexachlorobenzene	5	U	
87-86-5	Pentachlorophenol	5	U	
85-01-8	Phenanthrene	5	U	
120-12-7	Anthracene	5	U	
86-74-8	Carbazole	30		
84-74-2	Di-n-butylphthalate	5	U	
206-44-0	Fluoranthene	5	U	
129-00-0	Pyrene	5	U	
85-68-7	Butylbenzylphthalate	5	U	
91-94-1	3,3'-Dichlorobenzidine	5	UR	
56-55-3	Benzo[a]anthracene	5	U	
218-01-9	Chrysene	5	U	
117-81-7	bis(2-Ethylhexyl)phthalate	5	U	
117-84-0	Di-n-octylphthalate	5	U	
205-99-2	Benzo[b]fluoranthene	5	U	
207-08-9	Benzo[k]fluoranthene	5	U	
50-32-8	Benzo[a]pyrene	5	U	
193-39-5	Indeno[1,2,3-cd]pyrene	5	U	
53-70-3	Dibenz[a,h]anthracene	5	U	
191-24-2	Benzo[g,h,i]perylene	5	U	

1F  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET      EPA SAMPLE NO.  
 TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	LTV STEEL	Contract:	ML-10C	2000RC02S04
Lab Code:	USEPA-R5	Case No.:	20000047	SAS No.: SDG No.: GCMS026
Matrix: (soil/water)	WATER	Lab Sample ID: 2000RC02S04		
Sample wt/vol:	960	(g/ml)	ML	Lab File ID: 2C072812.D
Level: (low/med)	LOW	Date Received: 7/12/00		
% Moisture:		decanted: (Y/N)	N	Date Extracted: 07/14/00
Concentrated Extract Volume:	1000	(uL)		Date Analyzed: 07/29/00
Injection Volume:	1.0	(uL)		Dilution Factor: 1.0
GPC Cleanup: (Y/N)	N	pH:		

CONCENTRATION UNITS:

Number TICs found: 10      (ug/L or ug/Kg)      UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000108-47-4	Pyridine, 2,4-dimethyl- (CAS) \$\$	6.85	6	JN
2. 000095-15-8	Benz[b]thiophene (CAS) \$\$ Thia	11.87	10	JN
3. 000091-63-4	Quinoline, 2-methyl- (CAS) \$\$ 2-	13.74	6	JN
4. 000501-92-8	chavicol \$\$ para-ALLYL PHENO	13.79	6	JN
5. 003610-02-4	Benzo[b]thiophene-4-ol (CAS) \$\$	16.94	8	JN
6. 001504-06-9	3-methylindole-2(3H)-one \$\$ 1,3-	17.61	8	JN
7. 002739-16-4	1-formyl-1,2,3,4-tetrahydroquinoli	18.82	6	JN
8. 005400-75-9	2H-Benzimidazol-2-one, 1,3-dihy	21.26	10	JN
9. 000081-83-4	1H-Benz[de]isoquinoline-1,3(2H)-	23.47	7	JN
10. 000578-95-0	9(10H)-Acridinone (CAS) \$\$ Acri	24.86	12	JN

1B  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S05**

Lab Name: LTV STEEL

Contract: ML-10C

Lab Code: USEPA-R5

Case No.: 20000047

SAS No.:

SDG No.: GCMS026

Matrix: (soil/water)

WATER

Lab Sample ID: 2000RC02S05

Sample wt/vol:

1000 (g/ml) ML

Lab File ID: 2C072813.D

Level: (low/med)

LOW

Date Received: 7/12/00

% Moisture:

decanted:(Y/N) N

Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 07/29/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

*South Carolina*  
*X mark*

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
111-44-4	bis(2-Chloroethyl)ether	5	U	
108-95-2	Phenol	5	U	
95-57-8	2-Chlorophenol	5	U	
541-73-1	1,3-Dichlorobenzene	5	U	
106-46-7	1,4-Dichlorobenzene	5	U	
95-50-1	1,2-Dichlorobenzene	5	U	
100-51-6	Benzyl alcohol	5	U	
95-48-7	2-Methylphenol	5	U	
106-44-5	4-Methylphenol	5	U	
108-60-1	bis(2-chloroisopropyl)ether	5	U	
67-72-1	Hexachloroethane	5	U	
621-64-7	N-Nitroso-di-n-propylamine	5	U	
98-95-3	Nitrobenzene	5	U	
*8-59-1	Isophorone	5	U	
*8-75-5	2-Nitrophenol	5	U	
105-67-9	2,4-Dimethylphenol	5	U	
65-80-0	Benzoic acid	5	U J	
111-91-1	bis(2-Chloroethoxy)methane	5	U	
120-83-2	2,4-Dichlorophenol	5	U	
120-82-1	1,2,4-Trichlorobenzene	5	U	
91-20-3	Naphthalene	2	J	
106-47-8	4-Chloroaniline	5	U	
81-68-3	Hexachlorobutadiene	5	U	
53-50-7	4-Chloro-3-methylphenol	5	U	
51-57-6	2-Methylnaphthalene	5	U	
71-47-4	Hexachlorocyclopentadiene	5	U	
81-06-2	2,4,6-Trichlorophenol	5	U	
91-95-4	2,4,5-Trichlorophenol	20	U	
91-58-7	2-Chloronaphthalene	5	U	
81-74-4	2-Nitroaniline	5	U	
2,8-96-8	Acenaphthylene	5	U	
131-11-3	Dimethylphthalate	5	U	
610-20-2	2,6-Dinitrotoluene	5	U	
81-32-9	Acenaphthene	5	U	
91-09-2	3-Nitroaniline	20	U	
51-28-5	2,4-Dinitrophenol	20	U J	
132-64-9	Dibenzofuran	5	U	

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S05**

Lab Name: LTV STEEL Contract: ML-10C  
 Lab Code: USEPA-R5 Case No.: 20000047 SAS No.:        SDG No.: GCMS026  
 Matrix: (soil/water) WATER Lab Sample ID: 2000RC02S05  
 Sample wt/vol: 1000 (g/ml) ML Lab File ID: 2C072813.D  
 Level: (low/med) LOW Date Received: 7/12/00  
 % Moisture:        decanted:(Y/N) N Date Extracted: 07/14/00  
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/00  
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH:       

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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121-14-2	2,4-Dinitrotoluene	5	U	
100-02-7	4-Nitrophenol	5	U	
86-73-7	Fluorene	5	U	
7005-72-3	4-Chlorophenyl-phenylether	5	U	
84-66-2	Diethylphthalate	5	U	
100-01-6	4-Nitroaniline	20	U	
534-52-1	4,6-Dinitro-2-methylphenol	20	U	
86-30-6	n-Nitrosodiphenylamine	5	U	
101-55-3	4-Bromophenyl-phenylether	5	U	
118-74-1	Hexachlorobenzene	5	U	
87-86-5	Pentachlorophenol	5	U	
85-01-8	Phenanthrene	5	U	
120-12-7	Anthracene	5	U	
86-74-8	Carbazole	5	U	
84-74-2	Di-n-butylphthalate	5	U	
206-44-0	Fluoranthene	5	U	
129-00-0	Pyrene	5	U	
85-68-7	Butylbenzylphthalate	5	U	
91-94-1	3,3'-Dichlorobenzidine	5	UR	
56-55-3	Benzo[a]anthracene	5	U	
218-01-9	Chrysene	5	U	
117-81-7	bis(2-Ethylhexyl)phthalate	5	U	
117-84-0	Di-n-octylphthalate	5	U	
205-99-2	Benzo[b]fluoranthene	5	U	
207-08-9	Benzo[k]fluoranthene	5	U	
50-32-8	Benzo[a]pyrene	5	U	
193-39-5	Indeno[1,2,3-cd]pyrene	5	U	
53-70-3	Dibenz[a,h]anthracene	5	U	
191-24-2	Benzo[g,h,i]perylene	5	U	

1F  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET      EPA SAMPLE NO.  
 TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	LTV STEEL	Contract:	ML-10C	2000RC02S05	
Lab Code:	USEPA-R5	Case No.:	20000047	SDG No.:	GCMS026
Matrix: (soil/water)	WATER	Lab Sample ID:	2000RC02S05		
Sample wt/vol:	1000 (g/ml)	ML	Lab File ID:	2C072813.D	
Level: (low/med)	LOW	Date Received:			
% Moisture:		decanted: (Y/N)	N	Date Extracted:	07/14/00
Concentrated Extract Volume:	1000 (uL)	Date Analyzed:	07/29/00		
Injection Volume:	1.0 (uL)	Dilution Factor:	1.0		
HPLC Cleanup: (Y/N)	N	pH:			

CONCENTRATION UNITS:

Number TICs found: 5 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	19.77	29	J
2. 000092-48-8	2H-1-Benzopyran-2-one, 6-methyl	22.57	14	JN
3. 000081-84-5	1H,3H-Naphtho[1,8-cd]pyran-1,3-	23.03	770	JN
4.	unknown hydrocarbons	23.28	140	J
5.	unknown	27.45	12	J

Lab Name: LTV STEEL

Contract: ML-10C

2000RC02D05

Lab Code: USEPA-R5

Case No.: 20000047

SAS No.:

SDG No.: GCMS026

Matrix: (soil/water) WATER

Lab Sample ID: 2000RC02D05

Sample wt/vol: 970 (g/ml) ML

Lab File ID: 2C072814.D

Level: (low/med) LOW

Date Received: 7/12/00

% Moisture: decanted:(Y/N) N

Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 07/29/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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111-44-4	bis(2-Chloroethyl)ether	5	U	
108-95-2	Phenol	5	U	
95-57-8	2-Chlorophenol	5	U	
541-73-1	1,3-Dichlorobenzene	5	U	
106-46-7	1,4-Dichlorobenzene	5	U	
95-50-1	1,2-Dichlorobenzene	5	U	
100-51-6	Benzyl alcohol	5	U	
95-48-7	2-Methylphenol	5	U	
106-44-5	4-Methylphenol	5	U	
108-60-1	bis(2-chloroisopropyl)ether	5	U	
67-72-1	Hexachloroethane	5	U	
621-64-7	N-Nitroso-di-n-propylamine	5	U	
98-95-3	Nitrobenzene	5	U	
78-59-1	Isophorone	5	U	
88-75-5	2-Nitrophenol	5	U	
105-67-9	2,4-Dimethylphenol	5	U	
65-80-0	Benzoic acid	5	U	✓
111-91-1	bis(2-Chloroethoxy)methane	5	U	
120-83-2	2,4-Dichlorophenol	5	U	
120-82-1	1,2,4-Trichlorobenzene	5	U	
91-20-3	Naphthalene	2	J	
106-47-8	4-Chloroaniline	5	U	
87-68-3	Hexachlorobutadiene	5	U	
59-50-7	4-Chloro-3-methylphenol	5	U	
91-57-6	2-Methylnaphthalene	5	U	
77-47-4	Hexachlorocyclopentadiene	5	U	
88-06-2	2,4,6-Trichlorophenol	5	U	
95-95-4	2,4,5-Trichlorophenol	21	U	
91-58-7	2-Choronaphthalene	5	U	
88-74-4	2-Nitroaniline	5	U	
208-96-8	Acenaphthylene	4	J	
131-11-3	Dimethylphthalate	5	U	
606-20-2	2,6-Dinitrotoluene	5	U	
83-32-9	Acenaphthene	5	U	
99-09-2	3-Nitroaniline	21	U	
51-28-5	2,4-Dinitrophenol	21	U	✓
132-64-9	Dibenzofuran	5	U	

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02D05**

Lab Name: LTV STEEL Contract: ML-10C

Lab Code: USEPA-R5 Case No.: 20000047 SAS No.:        SDG No.: GCMS026

Matrix: (soil/water) WATER Lab Sample ID: 2000RC02D05

Sample wt/vol: 970 (g/ml) ML Lab File ID: 2C072814.D

Level: (low/med) LOW Date Received: 7/12/00

% Moisture:        decanted:(Y/N) N Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:       

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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121-14-2	2,4-Dinitrotoluene	5	U	
100-02-7	4-Nitrophenol	5	U	
86-73-7	Fluorene	5	U	
7005-72-3	4-Chlorophenyl-phenylether	5	U	
84-66-2	Diethylphthalate	5	U	
100-01-6	4-Nitroaniline	21	U	
534-52-1	4,6-Dinitro-2-methylphenol	21	U	
86-30-6	n-Nitrosodiphenylamine	5	U	
101-55-3	4-Bromophenyl-phenylether	5	U	
118-74-1	Hexachlorobenzene	5	U	
87-86-5	Pentachlorophenol	5	U	
85-01-8	Phenanthrene	5	U	
120-12-7	Anthracene	2	J	
86-74-8	Carbazole	5	U	
84-74-2	Di-n-butylphthalate	5	U	
206-44-0	Fluoranthene	5	U	
129-00-0	Pyrene	5	U	
85-68-7	Butylbenzylphthalate	5	U	
91-94-1	3,3'-Dichlorobenzidine	5	U R	
56-55-3	Benz[a]anthracene	5	U	
218-01-9	Chrysene	5	U	
117-81-7	bis(2-Ethylhexyl)phthalate	3	JB	
117-84-0	Di-n-octylphthalate	5	U	
205-99-2	Benzo[b]fluoranthene	5	U	
207-08-9	Benzo[k]fluoranthene	5	U	
50-32-8	Benzo[a]pyrene	5	U	
193-39-5	Indeno[1,2,3-cd]pyrene	5	U	
53-70-3	Dibenz[a,h]anthracene	5	U	
191-24-2	Benzo[g,h,i]perylene	5	U	

1F  
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET      EPA SAMPLE NO.  
 TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: <u>LTV STEEL</u>	Contract: <u>ML-10C</u>	<u>2000RC02D05</u>
Lab Code: <u>USEPA-R5</u>	Case No.: <u>20000047</u>	SAS No.: _____ SDG No.: <u>GCMS026</u>
Matrix: (soil/water) <u>WATER</u>	Lab Sample ID: <u>2000RC02D05</u>	
Sample wt/vol: <u>970</u> (g/ml) <u>ML</u>	Lab File ID: <u>2C072814.D</u>	
Level: (low/med) <u>LOW</u>	Date Received: _____	
% Moisture: _____	decanted: (Y/N) <u>N</u>	Date Extracted: <u>07/14/00</u>
Concentrated Extract Volume: <u>1000</u> (uL)	Date Analyzed: <u>07/29/00</u>	
Injection Volume: <u>1.0</u> (uL)	Dilution Factor: <u>1.0</u>	
GPC Cleanup: (Y/N) <u>N</u>	pH: _____	

CONCENTRATION UNITS:

Number TICs found: 5 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	19.76	21	J
2.	unknown	20.41	28	J
3.	unknown	21.10	21	J
4. 000081-84-5	1H,3H-Naphtho[1,8-cd]pyran-1,3-	23.22	840	JN
5.	unknown hydrocarbons	23.33	130	J

## SEMOVOLATILE ORGANICS ANALYSIS DATA SHEET

2000RC02S06

Lab Name: LTV STEEL

Contract: ML-10C

Lab Code: USEPA-R5

Case No.: 20000047

SAS No.: \_\_\_\_\_

SDG No.: GCMS026

Matrix: (soil/water) WATER

Lab Sample ID: 2000RC02S06

Sample wt/vol: 970 (g/ml) ML

Lab File ID: 2C072815.D

Level: (low/med) LOW

Date Received: 7/12/00

% Moisture: \_\_\_\_\_ decanted:(Y/N) N

Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 07/29/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
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111-44-4	bis(2-Chloroethyl)ether	5	U	
108-95-2	Phenol	6		
95-57-8	2-Chlorophenol	5	U	
541-73-1	1,3-Dichlorobenzene	5	U	
106-46-7	1,4-Dichlorobenzene	5	U	
95-50-1	1,2-Dichlorobenzene	5	U	
100-51-6	Benzyl alcohol	5	U	
95-48-7	2-Methylphenol	42		
106-44-5	4-Methylphenol	39		
108-60-1	bis(2-chloroisopropyl)ether	5	U	
67-72-1	Hexachloroethane	5	U	
621-64-7	N-Nitroso-di-n-propylamine	5	U	
98-95-3	Nitrobenzene	5	U	
78-59-1	Isophorone	5	U	
88-75-5	2-Nitrophenol	5	U	
105-67-9	2,4-Dimethylphenol	24		
65-80-0	Benzoic acid	5	U	3
111-91-1	bis(2-Chloroethoxy)methane	5	U	
120-83-2	2,4-Dichlorophenol	5	U	
120-82-1	1,2,4-Trichlorobenzene	5	U	
91-20-3	Naphthalene	2800	2000	ED
106-47-8	4-Chloroaniline	5	U	
87-68-3	Hexachlorobutadiene	5	U	
59-50-7	4-Chloro-3-methylphenol	5	U	
91-57-6	2-Methylnaphthalene	67		
77-47-4	Hexachlorocyclopentadiene	5	U	
88-06-2	2,4,6-Trichlorophenol	5	U	
95-95-4	2,4,5-Trichlorophenol	21	U	
91-58-7	2-Chloronaphthalene	5	U	
88-74-4	2-Nitroaniline	5	U	
208-96-8	Acenaphthylene	70		
131-11-3	Dimethylphthalate	5	U	
606-20-2	2,6-Dinitrotoluene	5	U	
83-32-9	Acenaphthene	28		
99-09-2	3-Nitroaniline	21	U	
51-28-5	2,4-Dinitrophenol	21	U	3
132-64-9	Dibenzofuran	33		

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

**2000RC02S06**

Lab Name: **LTV STEEL**

Contract: **ML-10C**

Lab Code: **USEPA-R5**

Case No.: **20000047**

SAS No.: \_\_\_\_\_

SDG No.: **GCMS026**

Matrix: (soil/water) **WATER**

Lab Sample ID: **2000RC02S06**

Sample wt/vol: **970** (g/ml) **ML**

Lab File ID: **2C072815.D**

Level: (low/med) **LOW**

Date Received: **7/12/00**

% Moisture: \_\_\_\_\_

decanted:(Y/N) **N**

Date Extracted: **07/14/00**

Concentrated Extract Volume: **1000** (uL)

Date Analyzed: **07/29/00**

Injection Volume: **1.0** (uL)

Dilution Factor: **1.0**

GPC Cleanup: (Y/N) **N**

pH: \_\_\_\_\_

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q
---------	----------	-----------------	------	---

121-14-2	2,4-Dinitrotoluene	5	U
100-02-7	4-Nitrophenol	5	U
86-73-7	Fluorene	42	
7005-72-3	4-Chlorophenyl-phenylether	5	U
84-66-2	Diethylphthalate	5	U
100-01-6	4-Nitroaniline	21	U
534-52-1	4,6-Dinitro-2-methylphenol	21	U
86-30-6	n-Nitrosodiphenylamine	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	5	U
85-01-8	Phenanthrene	28	
120-12-7	Anthracene	10	
86-74-8	Carbazole	160 470	EM
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	24	
129-00-0	Pyrene	18	
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	8	UR
56-55-3	Benzo[a]anthracene	8	
218-01-9	Chrysene	7	
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo[b]fluoranthene	15	
207-08-9	Benzo[k]fluoranthene	5	
50-32-8	Benzo[a]pyrene	11	
193-39-5	Indeno[1,2,3-cd]pyrene	4	J
53-70-3	Dibenz[a,h]anthracene	5	U
191-24-2	Benzo[g,h,i]perylene	5	U

## SEMICVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: LTV STEEL

Contract: ML-10C

2000RC02S06

Lab Code: USEPA-R5 Case No.: 20000047 SAS No.: SDG No.: GCMS026

Matrix: (soil/water) WATER Lab Sample ID: 2000RC02S06

Sample wt/vol: 970 (g/ml) ML Lab File ID: 2C072815.D

Level: (low/med) LOW Date Received: 7/12/00

% Moisture: decanted: (Y/N) N Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/29/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS:

Number TICs found: 9 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000271-89-6	Benzofuran (CAS) \$\$ Coumarone	8.17	52	JN
2. 000300-57-2	Benzene, 2-propenyl- (CAS) \$\$ A	8.93	30	JN
3. 000095-15-8	Benzo[b]thiophene (CAS) \$\$ Thia	12.01	62	JN
4. 000083-33-0	1H-Inden-1-one, 2,3-dihydro- (CA)	13.40	82	JN
5. 002739-16-4	1-formyl-1,2,3,4-tetrahydroquinoli	18.99	32	JN
6.	unknown	19.65	51	J
7. 000059-31-4	2(1H)-Quinolinone (CAS) \$\$ 2-Hy	19.76	38	JN
8. 000081-84-5	1H,3H-Naphtho[1,8-cd]pyran-1,3-	23.12	280	JN
9. 000578-95-0	9(10H)-Acridinone (CAS) \$\$ Acri	25.15	31	JN
UNKNOWN HYDROCARBONS		15 - 32	400	J



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

9/6/2000

Date: SEP 05 2000

Subject: Review of Region 5 Data for LTV Steel

From: Johnspson, Chemist  
Region 5 Central Regional Laboratory

To: Brian Freeman  
DE-9J

Jonathan -  
This LTV data appears  
to be acceptable for  
use - Brian

Attached are the results for Site: LTV Steel

CRL Data Set Number: 20000047

for analyses of: Chromium

Results are reported for sample numbers: 2000RC02S32, 2000RC02S33, 2000RC02S34,  
2000RC02S35, 2000RC02S36, 2000RC02S37, 2000RC02S38, 2000RC02D38, 2000RC02S39,  
2000RC02S40, 2000RC02S41, 2000RC02D41, 2000RC02S42, 2000RC02S43, 2000RC02S44,  
2000RC02S45, 2000RC02S46 and 2000RC02S47

Results Status:

- (x) Acceptable for Use  
( ) Data Qualified, but Acceptable for use  
( ) Data Unacceptable for Use

200000 47

901020

9/5/00

ENVIRONMENTAL PROTECTION AGENCY  
FOR THE TEAM METALS

VISION/HANCH

RCRA

NUMBER 901020 DATASET NUMBER 20000047 SAMPLING DATE 7-12-00 LAB ARRIVAL DATE 7/13/00 DUE DATE 8/27/00STUDY LTV SteelPRIORITY NCONTRACTOR TechLawL LUG  
NUMBER | SAMPLE DESCRIPTION | MATRIX |  
ITEM# | Sludge | TEST |  
TEST | TOXIC |  
UNITS | mg/L |

ME1235826

00R02532	D1	X	3089	
00R02533	E3	X	3090	
00R02534	A3	X	3091	
00R02535	A4	X	3092	
00R02536	A5	X	3093	
00R02537	B4	X	3094	
00R02538	B3	X	RUN MS/MSD on this one 3095 & 3097	
00R02539	B3	X	3096	
00R02540	C2	X	3098	
00R02540	C3	X	3099	
00R02541	C4	X	3100	
00R02541	C4	X	3101	
00R02542	C5	X	3102	
00R02543	C6	X	3103	
00R02544	D3	X	3104	
00R02545	D4	X	3105	
00R02546	D5	X	3106	
00R02547	D6	X	3107	

SPIKE

100g MPAC  
L 412

1000000000

1000000000

Metallic Sludge

**Date:** 5 September 2000

**Analyst:** John V. Morris

**Sample Batch Number:** 20000047

**Facility Name:** LTV Steel

**Analyte:** Chromium



### Narrative for the Analysis of Chromium in Sludges in Batch 20000047

On 13 July 2000, eighteen sludge samples (2000RC02S32-S47, D38, D41) were received by CRL for the analysis of total chromium. The total data was requested to determine if TCLP was to be done. If the sample would extract 100% in TCLP, it would require at least 100 mg Cr/kg to exceed the TCLP limits of 5 mg Cr/L in the extract. The samples were collected on 12 July 2000. The samples were gray in color, with tiny metallic slivers interspersed throughout the sample. Samples 2000RC02S32, S33, S34, S35, S37, S38, D38, S39, S40, S41, and S42 all had water separated from the sludge in the jar. Notably, 2000RC02S41 and 2000RC02D41 were different in this respect.

Aliquots were withdrawn for drying by mixing and subsampling from at least three different parts of the jar. Samples were dried at 105°C overnight and pulverized in a ball pestle impact grinder. XRF cups were made from the dried, homogenized, samples to determine approximate concentration of chromium. XRF screening indicated all samples were in the vicinity of 1% Cr, so for the total digestion, a special chromium spike was prepared from potassium dichromate (0.5658 g K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> in 100 mL), such that 200 mg Cr/L was added to the digest in each spike (5 mL spike solution to 50 mL final volume). The samples were digested using CRL SOP METALS034 (3050B) by K. Swan, from 21 July 2000 to 27 July 2000. The digestion log was number 1197. Samples were digested well within the six month holding time.

On 14 August 2000, J.V.Morris performed the ICP analysis of the digests using CRL SOP METALS004. Because of the difference in acid strength between the standards in use for this method and the 3050B digestion, the blanks and LCS were diluted five-fold. All samples and the spiked blank were diluted 100-fold into the same acid matrix as the ICP standards due to the expected value of chromium. Even so, a few samples still exceeded the 5 mg/L chromium standard after dilution. All instrument QC audits for Cr were in control. The digestion blanks, after correcting for the 5-fold dilution, were less than the MDL for the Cr 283.563 nm line. The spiked blank, after 100-fold dilution, was recovered at 93%. The LCS was within limits. One matrix spike (2000RC02S47) was recovered at 79%, outside the nominal 100±20% limits in the CRL SOP. This spiking solution was not the historical one, however, and it is within the 100±25% limits of the reference method. For this reason, the data was allowed to stand without a "J" flag. The field duplicates 2000RC02S38 and D38 are outside normal expected variation for this audit.

All analytical results files, sample information files and reformat files for chromium by ICP can be found on the R5CRL data server using the following path:  
h:\r5crl\vol3\metals\jvmorris\20000047\3300dv\

The narrative, QC summary spreadsheets, sample result calculation spreadsheets and the final sample report for chromium by ICP can be found on the R5CRL data server using the following path:

h:\r5crl\vol3\metals\jvmorris\20000047\reports\

US EPA CRL - Region V  
ICP Final Report Results

Sample Batch Number:	20000047	Study:	LTV
Analysis Date:	14 Aug 00		
Sample ID	Station ID	Analyte	Concentration
2000RC02S32	D1	Cr	40000 D mg/kg
2000RC02S33	E3	Cr	28000 D mg/kg
2000RC02S34	A3	Cr	35000 D mg/kg
2000RC02S35	A4	Cr	39000 D mg/kg
2000RC02S36	A5	Cr	38000 D,E mg/kg
2000RC02S37	B4	Cr	34000 D mg/kg
2000RC02S38	B3	Cr	40000 D mg/kg
2000RC02D38	B3	Cr	52000 D,E mg/kg
2000RC02S39	C2	Cr	48000 D,E mg/kg
2000RC02S40	C3	Cr	56000 D,E mg/kg
2000RC02S41	C4	Cr	34000 D mg/kg
2000RC02D41	C4	Cr	39000 D mg/kg
2000RC02S42	C5	Cr	35000 D mg/kg
2000RC02S43	C6	Cr	35000 D mg/kg
2000RC02S44	D3	Cr	33000 D mg/kg
2000RC02S45	D4	Cr	28000 D mg/kg
2000RC02S46	D5	Cr	29000 D mg/kg
2000RC02S47	D6	Cr	24000 D mg/kg

25 Aug 00

## CRL Data Review Qualification Codes

QUALIFIER	DESCRIPTION
B	This flag is used when the analyte is found in the associated <u>Blank</u> as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data.
D	This flag is used when the analyte concentration results from a required <u>Dilution</u> of the sample, extract or digestate.
E	This flag is used to identify analyte concentrations <u>Exceeding</u> the upper calibration range of the analytical instrument after dilution of the sample, extract or digestate. <u>The reported value is considered to be estimated</u>
J	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, at or above the CRL reporting limit (RL) but the quantitated value is <u>estimated</u> due to quality control limit(s) being exceeded. This flag accompanies all GC/MS tentatively identified compounds (TICs). This flag also applies to a suspected, unidentified interference. <u>(J is the flag used in the Superfund CLP SOW and Data Review Functional Guidelines and is used by CRL for consistency.)</u>
M	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, at or above the CRL <u>Method Detection Limit</u> (MDL) but below the CRL reporting limit (RL). This flag applies to all values in this concentration range and indicates the quantitated value is <u>estimated</u> due to its presence in this concentration range.
N	This flag applies to GC/MS <u>Tentatively Identified Compounds</u> (TICs) that have a mass spectral library match.
Q	This flag applies to analyte data that are severely estimated due to quality control and/or <u>Quantitation</u> problems, but are confirmed to be qualitatively present in the sample. <u>No value is reported with this qualification flag.</u>
R	This flag applies to analyte data that are <u>Rejected</u> and unusable due to severe quality control, quantitation and/or qualitative identification problems. No other qualification flags are reported for this analyte. <u>No value is reported with this qualification flag.</u>
U	This flag is used when the analyte was analyzed but <u>Undetected</u> in the sample. The CRL RL for the analyte accompanies this flag. As with sample results that are positive, the value is corrected for dry weight, dilution and/or sample weight or volume.



544 489 17 Y-100-100

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: SEP 05 2000

Subject: Review of Region 5 Data for LTV Steel

From: Francis A. Awanya, Chemist FAA  
Region 5 Central Regional Laboratory

Alida Roberman, Chemist AR  
Region 5 Central Regional Laboratory

To: Brian Freeman DE-9J

Attached are the results for Site: LTV Steel

CRL Data Set Number: 20000047

for analyses of: pH, Total Solids, Mercury( water and sediments), and Cyanide

Results are reported for sample numbers:

Soil samples: 2000RC02S16, 2000RC02S17, 2000RC02S18, 2000RC02S19, 2000RC02S20,  
2000RC02S21, 2000RC02S22, 2000RC02S23, 2000RC02S24, 2000RC02S25,  
2000RC02S26, 2000RC02S27, 2000RC02S28, 2000RC02S29, 2000RC02S30,  
2000RC02D16, 2000RC02B27, and 2000RC02D29.

Sludge samples: 2000RC02S32, 2000RC02S33, 2000RC02S34, 2000RC02S35,  
2000RC02S36, 2000RC02S37, 2000RC02S38, 2000RC02D38,  
2000RC02S39, 2000RC02S40, 2000RC02S41, 2000RC02D41,  
2000RC02S42, 2000RC02S43, 2000RC02S44, 2000RC02S45,  
2000RC02S46, and 2000RC02S47.

Water Samples: 2000RC02S01, 2000RC02S02, 2000RC02R03, 2000RC02S03,  
2000RC02S04, 2000RC02S05, 2000RC02D05, and 2000RC02S06.

Results Status:

- ( X ) Acceptable for Use:  
(    ) Data Qualified, but Acceptable for use:  
(    ) Data Unacceptable for Use

9/7/2000

Jonathan -  
This CRL data for  
LTV appears to be  
acceptable for use.  
Brian

<b>Data Set Number:</b>	<u>20000051</u>	<b>Parameter:</b>	<u>Residue, Total solids</u>
<b>Facility Name:</b>	<u>LTV Steel</u>		
<b>Study Name:</b>	<u>LTV Steel</u>		
<b>Date of Narrative:</b>	<u>09/05/2000</u>	<b>Analyst:</b>	<u>Francis A. Awanya</u>
		<b>Signature:</b>	<u>FAA</u>

### ANALYSIS CASE NARRATIVE

Twenty three (23) sediment samples were collected for total solids analysis on 07/11/2000. The samples arrived at the Central Regional Laboratory (CRL) on 07/12/2000. CRL sample identification numbers (CRL Sample ID) were assigned to the samples. The sample descriptions or station numbers were obtained from the Analysis Request Form (ARF). The following samples were received for analysis;

CRL SAMPLE I.D Number	SAMPLE DESCRIPTION
2000RC02S16	SWMU 45 - SE
2000RC02S17	SWMU 45 - E
2000RC02S18	SWMU 45 - SW
2000RC02S19	SWMU 45 - W
2000RC02S20	SWMU 50 - W/NW
2000RC02S21	SWMU 50 - S/SE
2000RC02S22	SWMU 50 - N
2000RC02S23	SWMU 50-N Tank
2000RC02S24	SWMU 11-NE/SE
2000RC02S25	SWMU 11 - N
2000RC02S26	SWMU 11 - S
2000RC02S27	SWMU 11-NE/NW
2000RC02S28	SWMU 28/29-NE
2000RC02S29	SWMU 28/29 -SE/NE
2000RC02S30	SWMU 28/29 - N
2000RC02D16	SWMU 45 -SE DUP
2000RC02B27	Post S27 Rinse
2000RC02D29	SWMU 28/29 - SE/NE

Samples were checked out for metals analysis from the CRL sample custodian on 07/17/2000. They were transferred to the Analytical and Inorganic (A&I) laboratory section of the CRL and kept in a sample storage refrigerator until analysis was completed. The samples were properly preserved by refrigeration.

### SAMPLE ANALYSIS:

All samples were analyzed for total solids analysis using CRL Standard Operating Procedure (CRL.SOP) AIG019 (Method reference 160.3/160.4, EPA/600/4-79-020). All the

<b>Data Set Number:</b>	<u>20000051</u>	<b>Parameter:</b>	<u>Residue, Total solids</u>
<b>Facility Name:</b>	<u>LTV Steel</u>		
<b>Study Name:</b>	<u>LTV Steel</u>		
<b>Date of Narrative:</b>	<u>09/05/2000</u>	<b>Analyst:</b>	<u>Francis A. Awanya</u>
		<b>Signature:</b>	<u>F.A.A.</u>

### ANALYSIS CASE NARRATIVE

samples were analyzed within the seven day holding time for total solids analysis.

#### QUALITY CONTROL (QC):

Analysis results were evaluated using the QC requirements of (CRL.SOP AIG019, Method reference 160.3/160.4, EPA/600/4-79-020). All the required quality control criteria for the laboratory, method, and system performance audits were evaluated and determined to be within the limits with the following exceptions;

#### SAMPLE RESULTS AND REPORTING:

All the sample results are acceptable for use.

#### ELECTRONIC DATA:

No electronic data.

**Data Set Number:** 20000047  
**Facility Name:** LTV Steel  
**Study Name:** LTV Steel  
**Date of Narrative:** 07/11/2000

**Parameter:** Cyanide

**Analyst:** Alida Roberman

**Signature:** \_\_\_\_\_

### **ANALYSIS CASE NARRATIVE**

Five (5) soil samples submitted for Cyanide analysis were collected on July 11, 2000 and the results are attached. The samples arrived at the Central Region Laboratory (CRL) on the next day. They were checked out from the Sample Custodian on July 14. All holding times were met. Samples went through the same procedure of preparation and analysis. They were stored in the refrigerator. Method #335.2 NS (CRL SOP # GE025) was used for preparation and analysis of samples. All samples were analyzed on July 17, 2000 CRL samples LOG number are: 2000RC02S16-S19 and D16. Required quality control criteria for the laboratory, method, and system performance audits were evaluated and determined to be within the limit. Raw data is with data set 2000047.

Electronic record pertaining to this analysis can be found in  
**r5crl\vol1\min\_nut\aroberma\achat2\cyanideT**

**Data file names are: 2000047.**

Samples were checked from the CRL sample custodian on 7/17/2000. The dates of collection, check out, and analysis is contained in the table below.

<b>Date of Collection:</b>	07/11/2000
<b>Date of Arrival:</b>	07/12/2000
<b>Checked-Out Date:</b>	07/14/2000
<b>Date of Analysis:</b>	07/17/2000
<b>SAMPLE IDENTIFICATION(S):</b>	
2000RC02S16 →	2000RC02D16
2000RC02S19	
2000RC02S17	2000RC02S18

<b>Data Set Number:</b>	<u>20000051</u>	<b>Parameter:</b>	<u>pH</u>
<b>Facility Name:</b>	<u>LTV Steel</u>		
<b>Study Name:</b>	<u>LTV Steel</u>		
<b>Date of Narrative:</b>	<u>09/05/2000</u>	<b>Analyst:</b>	<u>Francis A. Awanya</u>
		<b>Signature:</b>	<u>FAA</u>

### ANALYSIS CASE NARRATIVE

Eighteen (18) sludge samples were collected for pH analysis on 07/12/2000. The samples arrived at the Central Regional Laboratory (CRL) on 07/13/2000. CRL sample identification numbers (CRL Sample ID) were assigned to the samples. The sample descriptions or station numbers were obtained from the Analysis Request Form (ARF). The following samples were received for analysis;

CRL SAMPLE I.D Number	SAMPLE DESCRIPTION
2000RC02S32	D1
2000RC02S33	E3
2000RC02S34	A3
2000RC02S35	A4
2000RC02S36	A5
2000RC02S37	B4
2000RC02S38	B3
2000RC02D38	B3
2000RC02S39	C2
2000RC02S40	C3
2000RC02S41	C4
2000RC02D41	C4
2000RC02S42	C5
2000RC02S43	C6
2000RC02S44	D3
2000RC02S45	D4
2000RC02S46	D5
2000RC02S47	D6

Samples were checked out for metals analysis from the CRL sample custodian on 07/20/2000. They were transferred to the Analytical and Inorganic (A&I) laboratory section of the CRL and kept in a sample storage refrigerator until analysis was completed. The samples were properly preserved by refrigeration.

### SAMPLE ANALYSIS:

All samples were analyzed for pH using CRL Standard Operating Procedure (CRL.SOP)

<b>Data Set Number:</b>	<u>20000051</u>	<b>Parameter:</b>	<u>pH</u>
<b>Facility Name:</b>	<u>LTV Steel</u>		
<b>Study Name:</b>	<u>LTV Steel</u>		
<b>Date of Narrative:</b>	<u>09/05/2000</u>	<b>Analyst:</b>	<u>Francis A. Awanya</u>
		<b>Signature:</b>	<u>FAA</u>

### ANALYSIS CASE NARRATIVE

AIG008 (Method reference SW-846 Method 9045C). No holding time has been established for the pH determination by this method. All the samples were prepared and analyzed in triplicate. It was necessary to centrifuge the samples because the metals filings interfere with the electrometric measurement.

#### QUALITY CONTROL (QC):

Analysis results were evaluated using the QC requirements of CRL.SOP AIG008 (Method reference SW-846 Method 9045C). All the required quality control criteria for the laboratory, method, and system performance audits were evaluated and determined to be within the limits with the following exceptions;

**Duplicate audits:** One of two duplicate audits calculated was found to be out of the limit of 0.1 pH units. A probable cause is floating fine metal particles. This could not be completely removed by centrifuging. The replicate pH results could be affected by poor precision.

#### SAMPLE RESULTS AND REPORTING:

All the sample results are acceptable for use.

#### ELECTRONIC DATA:

No electronic data.

**Data Set Number:** 20000047      **Parameter:** Mercury

**Facility Name:** LTV STEEL      **Analyst:** Alida Roberman

**Study Name:** LTV STEEL      **Signature:** \_\_\_\_\_

**Date of Narrative:** 07/27/2000

### ANALYSIS CASE NARRATIVE

Eight (8) water samples submitted for Mercury analysis were collected on July 11, 2000 and the results are attached. The individual sample identifications are attached according to these specific dates, along with date(s) of analysis. On the next day of collection, the samples arrived to the Central Region Laboratory (CRL), but were not checked out from the Sample Custodian until the later date (included in the attached table(s)). Samples went through the same procedure of preparation and analysis. They were stored in the refrigerator. Method 245.2 (CRL SOP # AIG044) was used for preparation and analysis of samples. Required quality control criteria for the laboratory, method, and system performance audits were evaluated and determined to be within the limit. All holding times were met.

Raw data is with data set 2000047W.

The Mercury results are acceptable for use.

Electronic record pertaining to this analysis in

r5crl\vol1\min\_nut\roberman\PSAMercury\Hgwater

Data file names is: 20000047W.

### ANALYSIS CASE NARRATIVE - ATTACHMENT

#### D.S. # 20000047 HG (Water))

<b>Date of Collection:</b> 07/11/2000	<b>Date of Arrival:</b> 07/12/2000	<b>Checked-Out Date:</b> 07/17/2000	<b>Date of Analysis:</b> 07/27/2000
<b>SAMPLE IDENTIFICATION(S):</b>			
2000RC02S01	2000RC02S02	2000RC02S03	
2000RC02S04	2000RC02S05	2000RC02S06	
2000RC02D05	2000RC02R03		

**Data Set Number:** 20000047      **Parameter:** Mercury  
**Facility Name:** LTV STEEL      **Analyst:** Alida Roberman  
**Study Name:** LTV STEEL      **Signature:** \_\_\_\_\_  
**Date of Narrative:** 07/19/2000

### ANALYSIS CASE NARRATIVE

Seventeen (17) samples submitted for Mercury soil analysis were collected on July 11, 2000 and the results are attached. The individual sample identifications are attached according to these specific dates, along with date(s) of analysis. On the next day of collection, the samples arrived to the Central Region Laboratory (CRL), but were not checked out from the Sample Custodian until the later date (included in the attached table(s)). Samples went through the same procedure of preparation and analysis. They were stored in the refrigerator. Method 245.5 (CRL SOP # AIG043) was used for preparation and analysis of samples. Required quality control criteria for the laboratory, method, and system performance audits were evaluated and determined to be within the limit. All holding times were met.

Raw data is with data set 20000047.

The Mercury results are acceptable for use.

Electronic record pertaining to this analysis in

r5crl\vol1\min\_nut\aroberma\PSAMercury\Hgsoil

Data files' names are: 20000047, 20000047a.

### ANALYSIS CASE NARRATIVE - ATTACHMENT

#### D.S. # 20000047 HG (SOIL)

<b>Date of Collection:</b> 07/11/2000	<b>Date of Arrival:</b> 07/12/2000	<b>Checked-Out Date:</b> 07/17/2000	<b>Date of Analysis:</b> 07/17-19/2000
<b>SAMPLE IDENTIFICATION(S):</b>			
2000RC02S16	2000RC02S17	2000RC02S18	
2000RC02S19	2000RC02S20	2000RC02S21	
2000RC02S22	2000RC02S23	2000RC02S24	
2000RC02S25	2000RC02S26	2000RC02S27	
2000RC02S28	2000RC02S29	2000RC02S30	
2000RC02D16	2000RC02B27	2000RC02B29	

**ENVIRONMENTAL PROTECTION AGENCY**  
**REGION V**  
**CENTRAL REGIONAL LABORATORY**  
**FINAL RESULT REPORT FOR THE TEAM: MINERAL/NUTRIENTS**

DIVISION/BRANCH: RCRA SAMPLING DATE: 07/12/2000 LAB ARRIVAL DATE: 07/13/2000 DUE DATE: 09/05/2000  
DU NUMBER: 90102D DATA SET NUMBER: 20000047 STUDY: LTV-STEEL PRIORITY: Routine LABORATORY :CRL

SAMPLE #	CRL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENT SOLIDS TOTAL SOLIDS (103 - 105°C) (%SOLIDS)	SEDIMENT SOLIDS MERCURY (mg Hg/Kg)	SEDIMENT SOLIDS CYANIDE (mg CN/Kg)
1	2000RC02S16	SWMU 45 - SE	89.6	0.01 U	0.5
2	2000RC02S17	SWMU 45 - E	92.7	0.02	0.6
3	2000RC02S18	SWMU 45 - SW	93.4	0.01	1.2
4	2000RC02S19	SWMU 45 - W	93.5	0.01	0.7
5	2000RC02S20	SWMU 50 - W/NW	92.4	0.01 U	
6	2000RC02S21	SWMU 50 - S/SE	89.0	0.02	
7	2000RC02S22	SWMU 50 - N	92.0	0.05	
8	2000RC02S23	SWMU 50-N Tank	93.9	0.02	
9	2000RC02S24	SWMU 11-NE/SE	95.1	0.01 U	
10	2000RC02S25	SWMU 11 - N	89.7	0.02	
11	2000RC02S26	SWMU 11 - S	88.4	0.06	
12	2000RC02S27	SWMU 11-NE/NW	91.5	0.03	
13	2000RC02S28	SWMU 28/29-NE	94.8	0.01 U	
<b>DATE OF ANALYSIS</b>			07/14-17/2000	7/17-19/2000	07/14-17/2000
<b>ANALYST</b>			FKA	AR	AR

Reviewed by: FKA Date: 9/15/00

**ENVIRONMENTAL PROTECTION AGENCY  
REGION V  
CENTRAL REGIONAL LABORATORY  
FINAL RESULT REPORT FOR THE TEAM: MINERAL/NUTRIENTS**

**DIVISION/BRANCH: RCRA SAMPLING DATE: 07/12/2000 LAB ARRIVAL DATE: 07/13/2000 DUE DATE: 09/05/2000  
DU NUMBER: 90102D DATA SET NUMBER: 20000047 STUDY: LTV-STEEL PRIORITY: Routine LABORATORY :CRL**

SAMPLE #	CRL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENT SOLIDS TOTAL SOLIDS (103 - 105°C) (%SOLIDS)	SEDIMENT SOLIDS MERCURY (mg Hg/Kg)	MERCURY IN WATER ( $\mu$ g Hg/L)	SEDIMENT SOLIDS CYANIDE (mg CN/Kg)
14	2000RC02S29	SWMU 28/29 -SE/NE	91.3	0.02		
15	2000RC02S30	SWMU 28/29 - N	88.2	0.08		
16	2000RC02D16	SWMU 45 -SE DUP	91.3	0.01 U		0.8
17	2000RC02B27	Post S27 Rinse	-	-	0.2 U	
18	2000RC02D29	SWMU 28/29 - SE/NE	92.2	0.01		
<b>DATE OF ANALYSIS</b>			07/14-17/2000	07/17 - 19/2000	07/17 - 19/2000	07/14-17/2000
<b>ANALYST</b>			FAT	AR	AR	AR

Reviewed by: FAT Date: 9/15/00

Page 2 of 2

**ENVIRONMENTAL PROTECTION AGENCY  
REGION V  
CENTRAL REGIONAL LABORATORY  
FINAL RESULT REPORT FOR THE TEAM: MINERAL/NUTRIENTS**

**DIVISION/BRANCH: RCRA SAMPLING DATE: 07/12/2000 LAB ARRIVAL DATE: 07/13/2000 DUE DATE: 09/05/2000  
DU NUMBER: 90102D DATA SET NUMBER: 20000047 STUDY: LTV-STEEL PRIORITY: Routine LABORATORY :CRL**

SAMPLE #	CRL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENT SOLIDS pH		
			Replicate 1	Replicate 2	Replicate 3
1	2000RC02S32	D1	10.0 (23.7°C)	10.0 (23.6°C)	10.0 (23.6°C)
2	2000RC02S33	E3	9.6 (24.2°C)	9.8 (24.7°C)	9.7 (24.4°C)
3	2000RC02S34	A3	9.8 (24.2°C)	9.4 (24.0°C)	9.8 (24.3°C)
4	2000RC02S35	A4	8.4 (23.6°C)	8.4 (23.7°C)	8.0 (23.6°C)
5	2000RC02S36	A5	8.4 (23.7°C)	8.4 (23.9°C)	8.6 (23.7°C)
6	2000RC02S37	B4	8.6 (23.6°C)	8.8 (23.8°C)	8.9 (23.7°C)
7	2000RC02S38	B3	9.7 (23.5°C)	9.6 (23.5°C)	9.7 (23.6°C)
8	2000RC02D38	B3	9.7 (24.0°C)	9.7 (24.1°C)	9.6 (24.0°C)
9	2000RC02S39	C2	9.4 (23.6°C)	9.0 (23.5°C)	8.8 (23.8°C)
10	2000RC02S40	C3	9.0 (23.4°C)	8.6 (23.7°C)	8.2 (23.7°C)
11	2000RC02S41	C4	8.9 (23.3°C)	9.1 (23.3°C)	8.5 (23.3°C)
12	2000RC02D41	C4	8.4 (23.6°C)	8.5 (23.7°C)	8.5 (23.7°C)
13	2000RC02S42	C5	9.0 (23.2°C)	9.4 (23.4°C)	8.9 (23.6°C)
14	2000RC02S43	C6	8.6 (23.3°C)	8.9 (23.4°C)	9.1 (23.5°C)
15	2000RC02S44	D3	8.7 (23.4°C)	8.5 (23.5°C)	8.9 (23.5°C)
<b>DATE OF ANALYSIS</b>			7/24-27/2000	7/24-27/2000	7/24-27/2000
<b>ANALYST</b>			FAT	FAT	FAT

Reviewed by: Alida Poburudza Date: 9/05/2000

**ENVIRONMENTAL PROTECTION AGENCY  
REGION V  
CENTRAL REGIONAL LABORATORY  
FINAL RESULT REPORT FOR THE TEAM: MINERAL/NUTRIENTS**

**DIVISION/BRANCH: RCRA SAMPLING DATE: 07/12/2000 LAB ARRIVAL DATE: 07/13/2000 DUE DATE: 09/05/2000  
DU NUMBER: 90102D DATA SET NUMBER: 20000047 STUDY: LTV-STEEL PRIORITY: Routine LABORATORY :CRL**

SAMPLE #	CRL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENT SOLIDS pH		
			Replicate 1	Replicate 2	Replicate 3
16	2000RC02S45	D4	9.0 (23.7 °C)	8.8 (23.6 °C)	8.9 (23.6 °C)
17	2000RC02S46	D5	8.8 (23.6 °C)	8.8 (23.4 °C)	9.0 (23.7 °C)
18	2000RC02S47	D6	8.6 (23.4 °C)	8.6 (23.6 °C)	9.0 (23.5 °C)
<b>DATE OF ANALYSIS</b>			7/24-27/2000	7/24-27/2000	7/24-27/2000
<b>ANALYST</b>			F&A	F&A	F&A

Reviewed by: Alide Roberson Date: 9/05/2000

**ENVIRONMENTAL PROTECTION AGENCY  
REGION V  
CENTRAL REGIONAL LABORATORY  
FINAL RESULT REPORT FOR THE TEAM: MINERAL/NUTRIENTS**

**DIVISION/BRANCH: RCRA SAMPLING DATE: 07/11/2000 LAB ARRIVAL DATE: 07/12/2000 DUE DATE: 09/05/2000  
BU NUMBER: 90102D DATA SET NUMBER: 20000047 STUDY: LTV-STEEL PRIORITY: Routine LABORATORY :CRL**

SAMPLE #	CRL LOG NUMBER	SAMPLE DESCRIPTION	MERCURY IN WATER ( $\mu\text{g Hg/L}$ )			
1	2000RC02S01	Tar Storage Tank #1	0.2 U			
2	2000RC02S02	Tar Storage Tank #2	0.2 U			
3	2000RC02R03	Rinse Blank from Ager Stem	0.2 U			
4	2000RC02S03	Equipment Maintenance Shed	0.2 U			
5	2000RC02S04	North Decanter Tank	0.2 U			
6	2000RC02S05	South Decanter Tank	0.2 U			
7	2000RC02D05	Duplicate, South Decanter Tank	0.2 U			
8	2000RC02S06	Downgradient Decanter Tanks	0.2 U			
<b>DATE OF ANALYSIS</b>			07/27/2000			
<b>ANALYST</b>			<i>AR</i>			

Reviewed by: FAT Date: 9/15/00

## ATTACHMENT 1

**CRL Data Review Qualification Codes**

QUALIFIER	DESCRIPTION
B	This flag is used when the analyte is found in the associated <u>Blank</u> as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data.
D	This flag is used when the analyte concentration results from a required <u>Dilution</u> of the sample, extract or digestate.
E	This flag is used to identify analyte concentrations <u>Exceeding</u> the upper calibration range of the analytical instrument after dilution of the sample, extract or digestate. <u>The reported value is considered to be estimated</u>
J	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, at or above the CRL reporting limit (RL) but the quantitated value is <u>estimated</u> due to quality control limit(s) being exceeded. This flag accompanies all GC/MS tentatively identified compounds (TICs). This flag also applies to a suspected, unidentified interference. ( <u>J</u> is the flag used in the Superfund CLP SOW and Data Review Functional Guidelines and is used by CRL for consistency.)
M	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, at or above the CRL <u>Method Detection Limit</u> (MDL) but below the CRL reporting limit (RL). This flag applies to all values in this concentration range and indicates the quantitated value is <u>estimated</u> due to its presence in this concentration range.
N	This flag applies to GC/MS TICs that have <u>No</u> mass spectral library match.
Q	This flag applies to analyte data that are severely estimated due to quality control and/or <u>Quantitation</u> problems, but are confirmed to be qualitatively present in the sample. <u>No value is reported with this qualification flag</u> .
R	This flag applies to analyte data that are <u>Rejected</u> and unusable due to severe quality control, quantitation and/or qualitative identification problems. No other qualification flags are reported for this analyte. <u>No value is reported with this qualification flag</u> .
U	This flag is used when the analyte was analyzed but <u>Undetected</u> in the sample. The CRL RL for the analyte accompanies this flag. As with sample results that are positive, the value is corrected for dry weight, dilution and/or sample weight or volume.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: AUG 21 2000

Subject: Review of Region 5 Data for LTV STEEL

From: Matthew A. Knopp, Chemist *JK 8.16.00*  
Region 5 Central Regional Laboratory

To: Brian Freeman  
*DE - 9J*

Attached are the results for Site: LTV STEEL

CRL Data Set Number: 20000047

for analyses of : GFAA METALS (As, Se)

Results are reported for sample numbers: Water samples (2000RC02S01-S06, D05, R03 and R27)  
Soil samples (2000RC02S16-S30, D16 and D29).

Results Status:

- (X) Acceptable for Use  
( ) Data Qualified, but Acceptable for use  
( ) Data Unacceptable for Use

*Sylvia Griffin*

AUG 21 2000

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CRL Data Management Coordinator and Date Received

Date Transmitted: AUG 21 2000

Please have the US EPA project leader fill out the customer survey form on the Region 5 Intranet:  
<http://www.r5intra.epa.gov/crl/qa.html>, (← by clicking on this link, or call George Schupp, CRL Sample Coordinator, at 3-1226).

*As, Se*

Please sign and date this form below and return it with any comments to:

Sylvia Griffin  
Data Management Coordinator  
Region 5 Central Regional Laboratory  
ML - 10C

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Received by and Date

Comments:

20000047

# **ENVIRONMENTAL PROTECTION AGENCY FOR THE TEAM: METALS**

901020

DIVISION/BRANCH RCRA

**DU NUMBER** 90702D

DATA SET NUMBER 2000 0047 STUDY LTV

**SAMPLE DATE** 7/11/06

**LAB ARRIVAL DATE**

7/12/cr

DUE DATE

8/28/cv

20000047

ENVIRONMENTAL PROTECTION AGENCY  
FOR THE HAZARD METALS

901021D

DIVISION/BRAHCN RCRA

DU NUMBER 901021D DATASET NUMBER 20000047 SAMPLING DATE 7-11-00 LAN ARRIVAL DATE 7/12/00 DUE DATE 8/28/00

CRN LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENTS SOLID S TOTAL ICAP ** MG/KG (DRY WT.)	SEDIMENTS SOLID S AS MG/KG (DRY WT.)	SEDIMENTS SOLID S Hg PC/KG (DRY WT.)	SEDIMENTS SOLID S BE MET4203	SEDIMENTS SOLID S MET4213	SEDIMENTS SOLID S TL MET4223	TCHLAW TAG NUMBERS
200RC02S16	Swmu 45-SE	X				X		3250
200RC02S17	Swmu 45-E	X				X		3254
200RC02S18	Swmu 45-SW	X				X		3255
200RC02S19	Swmu 45-W	X				X		3257
200RC02S20	Swmu 50-W/NW	X				X		3259
2000RC02S21	Swmu 50-S/SE	X				X		3261
2000RC02S22	Swmu 50-N	X				X		3262
2000RC02S23	Swmu 50-N Tank	X				X		3263
2000RC02S24	Swmu 11-NE/SE	X				X		3264
2000RC02S25	Swmu 11-N	X				X		3265
2000RC02S26	Swmu 11-S	X				X		3266
2000RC02S27	Swmu 11-NE/NW	X				X		3267
2000RC02S28	Swmu 28/29-NE	X				X		3270
2000RC02S29	Swmu 28/29-SE/NC	X				X		3271
2000RC02S30	Swmu 28/29-N	X				X		3272
2000RC02D16	Swmu 45-SE Amp	X				X		3251
2000RC02B27	Post 527 Rinse	X				X		3268
2000RC02D29	Swmu 28/29-SE/NC	X				X		3274
	** RCRA-8 metals							
	* WATER/BLANK							

**Site Name:** LTV STEEL  
**Date Generated:** 08.15.00

**Method Number:** AA METALS  
**Data Set #:** 20000047

### **GFAA NARRATIVE for Data Set 20000047**

Seventeen sediment samples (2000RC02S16-S30, D16 and D29) and nine water samples (2000RC02S01-S06, D05, R03 and R27) were submitted for the analysis of total arsenic and selenium by Graphite Furnace Atomic Absorption (GFAA). The samples were collected on 07.11.00 and were received by the CRL on 07.12.00.

The water samples were digested for arsenic and selenium following the 200.2 hot block standard digestion protocols for water samples. The soil samples were digested for arsenic and selenium following the 3050B hot plate standard digestion protocols for soil samples. The water samples were digested by M. Knopp on 07.17.00 (digestion number 1196) within the six month hold time for metals. The soil samples were digested on by J. Morris on 07.27.00 (digestion number 1198). Sample analysis began on 07.19.00 and concluded on 08.09.00.

All analytical results files, sample information files and reformat files for arsenic and selenium can be found on the R5CRL data server using the following paths:  
h:\r5crl\vol3\metals\mknopp\20000047\SIMAA\AsSe\

The narrative, QC summary spreadsheets, sample result calculation spreadsheets and the final sample report for arsenic and selenium can be found on the R5CRL data server using the following path:

h:\r5crl\vol3\metals\mknopp\20000047\GFAA\

### **WATER SAMPLES**

#### **Arsenic and Selenium**

\* Please note: In-house control limits have not been established for the PE SIMAA 6000 methods at this time. Interim limits were used to evaluate the data.

#### **Results file 071900a**

The recovery of the RLC standard (77%) for As was outside the interim limits of 100 +/- 20%. Since the As analysis method has a calibration standard at the reporting limit and the instrument was successfully calibrated using this standard, the analyst believes that this QC audit failure does not have a significant impact on the data.

Narrative by: M. Knopp Chemist, USEPA  
Date: 8.15.00

All remaining QC were within the specified interim control limits for As and Se.

All arsenic and selenium data are acceptable.

Results file 072400

SOIL SAMPLES

\* Please note: In-house control limits have not been established for the PE SIMAA 6000 methods at this time. Interim limits were used to evaluate the data.

\*\* Please note: All soil digests were diluted by a factor of at least 10 times before analysis. This was due in part to dilute out the Al in the samples which is known to pose a positive interference affect on As when analyzed on the PE SIMAA 6000.

Arsenic and Selenium

Results file 062700

The recovery of the RLC standard (123.5 %) for As was outside the interim limits of 100 +/- 20%. Since the As analysis method has a calibration standard at the reporting limit and the instrument was successfully calibrated using this standard, the analyst believes that this QC audit failure does not have a significant impact on the data.

All remaining QC were within the specified interim control limits for As and Se.

All arsenic and selenium data are acceptable.

Narrative by: M. D. Sps Chemist, USEPA  
Date: 8/15/00

## CRL Data Review Qualification Codes

<b>QUALIFIER</b>	<b>DESCRIPTION</b>
<b>B</b>	This flag is used when the analyte is found in the associated <u>Blank</u> as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data. See the case narrative for a discussion of common lab contaminants and/or the relative concentration of contamination in the samples and blanks for relevance.
<b>D</b>	This flag is used when the analyte concentration results from a required <u>Dilution</u> of the sample, extract or digestate.
<b>E</b>	This flag is used to identify analyte concentrations <u>Exceeding</u> the upper calibration range of the analytical instrument after dilution of the sample, extract or digestate. <u>The reported value is considered to be estimated</u>
<b>J</b>	This flag is used when the analyte is <u>estimated</u> due to quality control limit(s) being exceeded. This flag accompanies all GC/MS tentatively identified compounds (TICs). This flag also applies to a suspected, unidentified interference. This flag is placed on affected detected results as well as non-detected (i.e., "U" flagged) results. ( <b>J</b> is the flag used in the Superfund CLP SOW and Data Review Functional Guidelines and is used by CRL for consistency.)
<b>M</b>	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, at or above the CRL <u>Method Detection Limit (MDL)</u> but below the CRL reporting limit (RL). This flag applies to all values in this concentration range and indicates the quantitated value is <u>estimated</u> due to its presence in this concentration range.
<b>N</b>	This flag applies to GC/MS <u>Tentatively Identified Compounds (TICs)</u> that have a mass spectral library match.
<b>Q</b>	This flag applies to analyte data that are severely estimated due to quality control and/or <u>Quantitation</u> problems, but are confirmed to be qualitatively present in the sample. <u>No value is reported with this qualification flag.</u>
<b>R</b>	This flag applies to analyte data that are <u>Rejected</u> and unusable due to severe quality control, quantitation and/or qualitative identification problems. No other qualification flags are reported for this analyte. <u>No value is reported with this qualification flag.</u>
<b>U</b>	This flag is used when the analyte was analyzed but <u>Undetected</u> in the sample. The CRL RL for the analyte accompanies this flag. As with sample results that are positive, the value is corrected for dry weight, dilution and/or sample weight or volume.

**FINAL SAMPLE REPORT FOR GFAA (WATER SAMPLES)**  
**DATA SET 20000047**  
**LTV STEEL SURVEY**  
**TOTAL METALS ( $\mu\text{g/L}$ )**

SAMPLE 2000RC02	As Result	Se Result
S01	21	8 UD
S02	49	8 UD
S03	2 U	10 UD
S04	5	20 UD
S05	2 U	5
D05	2 U	10 UD
S06	7	8 UD
R03	2 U	2 U
R27	2 U	2 U
ANALYST/ DATE	<i>M. Karp</i> 8.18.00	<i>M. Karp</i> 8.18.00

DATA SET: 20000047

FINAL SAMPLE REPORT (SOIL SAMPLES)

SAMPLE <u>ID</u>	As <u>Final Result (mg/Kg)</u>	Se <u>Final Result (mg/Kg)</u>
2000RC02S16	4.0 UD	5.1 UD
2000RC02D16	3.9 UD	4.9 UD
2000RC02S17	4.1UD	5.2 UD
2000RC02S18	4.0 UD	4.9 UD
2000RC02S19	4.0 UD	5.0 UD
2000RC02S20	3.9 UD	4.9 UD
2000RC02S21	3.9 UD	4.9 UD
2000RC02S22	3.4 UD	4.2 UD
2000RC02S23	4.1 UD	5.1 UD
2000RC02S24	4.0 UD	4.9 UD
2000RC02S25	8.9D	5.2 UD
2000RC02S26	10.2D	5.1 UD
2000RC02S27	4.1 UD	5.1 UD
2000RC02S28	3.9 UD	4.8 UD
2000RC02S29	3.8 UD	4.8 UD
2000RC02D29	4.1 UD	5.1 UD
2000RC02S30	3.8 UD	4.8 UD

Analyst:



Date:





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: SEP 08 2000

Subject: Review of Region 5 Data for LTV Steel

From: John V. Morris, Chemist  
Region 5 Central Regional Laboratory

To: Jonathan Adenuga  
DRE - 9J

Attached are the results for Site: LTV Steel

CRL Data Set Number: 20000047

for analyses of: ICP (soil)

Results are reported for sample numbers: 2000RC02S16, 2000RC02D16, 2000RC02S17,  
2000RC02S18, 2000RC02S19, 2000RC02S20, 2000RC02S21, 2000RC02S22, 2000RC02S23,  
2000RC02S24, 2000RC02S25, 2000RC02S26, 2000RC02S27, 2000RC02S28, 2000RC02S29,  
2000RC02D29 and 2000RC02S30

Results Status:

- ( ) Acceptable for Use  
( ) Data Qualified, but Acceptable for use, per narrative  
( ) Data Unacceptable for Use

CRL Data Management Coordinator and Date Received

*Sylvia Griffin*

SEP 08 2000

**SEP 08 2000**

Date Transmitted: \_\_\_\_\_

Please have the US EPA project leader fill out the customer survey form on the Region 5 Intranet:  
<http://www.r5intra.epa.gov/crl/qa.html>, (← by clicking on this link, or call George Schupp, CRL Sample Coordinator, at 3-1226).

Please sign and date this form below and return it with any comments to:

Sylvia Griffin  
Data Management Coordinator  
Region 5 Central Regional Laboratory  
ML - 10C

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Received by and Date

Comments:

Date: 6 September 2000  
Analyst: John V. Morris  
Sample Batch Number: 20000047  
Facility Name: LTV Steel  
Analyte: ICP Metals

*J. V. Morris* *modified*  
*8 Sept 00*

### Narrative for the Analysis of ICP Metals in Soils in Batch 20000047

On 12 July 2000, seventeen soil samples (2000RC02S16-S30, D16, D29) were received by CRL for the analysis of total RCRA metals. The total data was requested to determine if TCLP was to be done. If the sample would extract 100% in TCLP, it would require, for example, at least 100 mg Cr/kg to exceed the TCLP limits of 5 mg Cr/L in the extract. The samples were collected on 11 July 2000.

Samples were dried at 105°C overnight for total solids by F. Awanya. These dried soils were received by J.V.Morris, and pulverized in a ball pestle impact grinder. XRF cups were made from the dried, homogenized, samples to determine approximate concentration of metals. XRF screening indicated most samples exceeded 100 mg Cr/kg, so for the total digestion, to determine if TCLP would be necessary, the samples were digested using CRL SOP METALS034 (3050B). The final volume used was 100 mL instead of the 50 mL in the CRL SOP. The digestion was performed on 27-28 July 2000, with only beaker pre-cleaning taking place on the 27th. The digestion log was number 1198. All of the LTV soils went to a gel close to dryness, and the volume swelled. Only one addition of concentrated nitric acid was necessary. Sample 2000RC02S28 formed a cement on the bottom of the beaker, which did not break up until the filtration washes. Samples were digested well within the six month holding time.

On 4 August 2000, J.V.Morris performed the ICP analysis of the digests using CRL SOP METALS004. Because of the difference in acid strength between the standards in use for this method and the 3050B digestion, all samples, blanks and quality control sample digests were diluted two-fold. All instrument QC audits were in control except the first two Ca and Fe calibration verification checks (Hi AQC) were just out (111.8% and 111.5% for Ca, and 110.4% for the first Fe). The digestion blank, after correcting for the 2-fold dilution, were less than the MDLs except for Mg 279.070, Mn 257.610, Sr 407.771, V 310.230, and the Zn 213.857 line was negative. Those elements are flagged with a "B". Instrument blanks were outside the limits of  $\pm$ MDL for the following elements: 1st, Cd, Li, Mg, Mo, V; 2nd, Ca, Mn, Mo, V; 3rd, Ca, K, Mo; 4th, Ca, Cu, Li, Mg, Mn, Mo. The bracketed samples are flagged with a "B", although all, except V, are just beyond the determined MDL by a small percentage. V 310.289 is more than twice the MDL in some instances. In all cases, either the blank is small compared to the concentration in the prepared sample, or the sample is below reporting limits. The spiked blank was in control. The LCS was within limits, except for Fe, which was 24% high. The matrix spikes for the RCRA metals reported by this technique (Ag, Ba, Cd, Cr, & Pb) were within the nominal CRL control limits ( $100 \pm 20\%$ ) except for the Pb spike on 2000RC02S16 (79%). Other elements outside limits for the matrix spikes were Cu (75%) and Mo (171%) on 2000RC02S16, and Be (191%), Mo(126%), and V (-9200%) for 2000RC02S25. V was affected by the duplication, which was very bad (180% RPD), and this in turn affected Be(162% RPD). Other precision problems on 2000RC02S25 were Ag (24% RPD), Al (42% RPD), B (41% RPD), Co (36% RPD), K (22% RPD), and Li (48% RPD). For the duplicate of 2000RC02S16, Ag (73% x

Date: 6 September 2000

Analyst: John V. Morris

Sample Batch Number: 20000047

Facility Name: LTV Steel

Analyte: ICP Metals

*John V. Morris  
8/5/00*

RPD), Cd (635% RPD), Cr (50% RPD), Fe (31% RPD), Mn (35% RPD), Mo (320% RPD), Pb (39% RPD), and V (50% RPD) were out of control. Many of these had duplicate differences greater than the detection limit, but the results were below reporting limits. All the cited elements were flagged with the "J" flag. The "J" flags were partitioned because, in appearance, there appeared to be two populations of samples, the gray soils, and the brown and red-brown soils. The flags from the matrix QC of sample 2000RC02S16 were assigned to the gray soils, and those from the matrix QC of sample 2000RC02S25 were assigned to the brown soils.

All analytical results files, sample information files and reformat files for chromium by ICP can be found on the R5CRL data server using the following path:

`h:\r5crl\vol3\metals\jvmorris\20000047\3300dv\`

The narrative, QC summary spreadsheets, sample result calculation spreadsheets and the final sample report for chromium by ICP can be found on the R5CRL data server using the following path:

`h:\r5crl\vol3\metals\jvmorris\20000047\reports\`



20000050

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DIVISION/BRANCH WATER DIVISION  
DATA SET NUMBER 20000050

SAMPLE DATE 5/30/00 LAB ARRIVAL DATE 7/14/00 DU<sup>E</sup> DATE 9/12/00 SAMPLER Mary Fulghum  
STUDY National Lake Shore PRIORITY Low - 2 GPRA NUMBER 90102B

\*SAMPLE COLLECTED ON THE BEACH INSIDE OF A PLASTIC BOTTLE NATURAL SPRING WATER BOTTLE.

## CRL Data Review Qualification Codes

QUALIFIER	DESCRIPTION
B	This flag is used when the analyte is found in the associated <u>Blank</u> as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data.
D	This flag is used when the analyte concentration results from a required <u>Dilution</u> of the sample, extract or digestate.
E	This flag is used to identify analyte concentrations <u>Exceeding</u> the upper calibration range of the analytical instrument after dilution of the sample, extract or digestate. <u>The reported value is considered to be estimated</u>
J	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, at or above the CRL reporting limit (RL) but the quantitated value is <u>estimated</u> due to quality control limit(s) being exceeded. This flag accompanies all GC/MS tentatively identified compounds (TICs). This flag also applies to a suspected, unidentified interference. ( <u>J</u> is the flag used in the Superfund CLP SOW and Data Review Functional Guidelines and is used by CRL for consistency.)
M	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, at or above the CRL <u>Method Detection Limit</u> (MDL) but below the CRL reporting limit (RL). This flag applies to all values in this concentration range and indicates the quantitated value is <u>estimated</u> due to its presence in this concentration range.
N	This flag applies to GC/MS <u>Tentatively Identified Compounds</u> (TICs) that have a mass spectral library match.
Q	This flag applies to analyte data that are severely estimated due to quality control and/or <u>Quantitation</u> problems, but are confirmed to be qualitatively present in the sample. <u>No value is reported with this qualification flag.</u>
R	This flag applies to analyte data that are <u>Rejected</u> and unusable due to severe quality control, quantitation and/or qualitative identification problems. No other qualification flags are reported for this analyte. <u>No value is reported with this qualification flag.</u>
U	This flag is used when the analyte was analyzed but <u>Undetected</u> in the sample. The CRL RL for the analyte accompanies this flag. As with sample results that are positive, the value is corrected for dry weight, dilution and/or sample weight or volume.

US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S16 Station ID: SWMU45-SE  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2.4 U,J,D	mg/kg
Aluminum	34000 D	mg/kg
Boron	28 U,D	mg/kg
Barium	240 D	mg/kg
Beryllium	8.7 D	mg/kg
Calcium	240000 E,B,J,D	mg/kg
Cadmium	2.8 U,B,J,D	mg/kg
Cobalt	16 U,D	mg/kg
Chromium	150 J,D	mg/kg
Copper	33 J,D	mg/kg
Iron	25000 J,D	mg/kg
Potassium	3400 D	mg/kg
Lithium	49 B,D	mg/kg
Magnesium	47000 B,D	mg/kg
Manganese	4700 B,J,E,D	mg/kg
Molybdenum	32 U,B,J,D	mg/kg
Sodium	2600 D	mg/kg
Nickel	32 U,D	mg/kg
Lead	41 U,J,D	mg/kg
Strontium	260 B,D	mg/kg
Titanium	990 D	mg/kg
Vanadium	57 B,J,D	mg/kg
Zinc	76 B,D	mg/kg

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US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02D16 Station ID: SWMU45SED  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2.4 U,J,D	mg/kg
Aluminum	34000 D	mg/kg
Boron	29 D	mg/kg
Barium	260 D	mg/kg
Beryllium	8.8 D	mg/kg
Calcium	240000 E,B,J,D	mg/kg
Cadmium	2.8 U,B,J,D	mg/kg
Cobalt	16 U,D	mg/kg
Chromium	180 J,D	mg/kg
Copper	45 J,D	mg/kg
Iron	27000 J,D	mg/kg
Potassium	3600 D	mg/kg
Lithium	45 B,D	mg/kg
Magnesium	47000 B,D	mg/kg
Manganese	5100 B,J,E,D	mg/kg
Molybdenum	32 U,B,J,D	mg/kg
Sodium	2700 D	mg/kg
Nickel	32 U,D	mg/kg
Lead	40 U,J,D	mg/kg
Strontium	260 B,D	mg/kg
Titanium	1000 D	mg/kg
Vanadium	63 B,J,D	mg/kg
Zinc	98 B,D	mg/kg

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US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S17 Station ID: SWMU45-E  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2.5 U,J,D	mg/kg
Aluminum	26000 D	mg/kg
Boron	29 U,D	mg/kg
Barium	210 D	mg/kg
Beryllium	8 D	mg/kg
Calcium	190000 B,J,D	mg/kg
Cadmium	2.9 U,B,J,D	mg/kg
Cobalt	17 U,D	mg/kg
Chromium	200 J,D	mg/kg
Copper	36 J,D	mg/kg
Iron	34000 J,D	mg/kg
Potassium	2400 D	mg/kg
Lithium	36 B,D	mg/kg
Magnesium	38000 B,D	mg/kg
Manganese	5400 B,J,E,D	mg/kg
Molybdenum	33 U,B,J,D	mg/kg
Sodium	1800 D	mg/kg
Nickel	33 U,D	mg/kg
Lead	41 U,J,D	mg/kg
Strontium	200 D	mg/kg
Titanium	770 D	mg/kg
Vanadium	77 B,J,D	mg/kg
Zinc	99 B,D	mg/kg

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US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S18 Station ID: SWMU45-SW  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2.4 U,J,D	mg/kg
Aluminum	37000 D	mg/kg
Boron	35 D	mg/kg
Barium	310 D	mg/kg
Beryllium	12 D	mg/kg
Calcium	250000 B,E,J,D	mg/kg
Cadmium	2.8 U,B,J,D	mg/kg
Cobalt	16 U,D	mg/kg
Chromium	76 J,D	mg/kg
Copper	34 J,D	mg/kg
Iron	15000 J,D	mg/kg
Potassium	3800 D	mg/kg
Lithium	51 B,D	mg/kg
Magnesium	49000 B,D	mg/kg
Manganese	3600 B,J,E,D	mg/kg
Molybdenum	32 U,B,J,D	mg/kg
Sodium	2800 D	mg/kg
Nickel	32 U,D	mg/kg
Lead	40 U,J,D	mg/kg
Strontium	290 B,D	mg/kg
Titanium	1000 D	mg/kg
Vanadium	35 B,J,D	mg/kg
Zinc	110 B,D	mg/kg

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US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S19 Station ID: SWMU45-W  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2.4 U,J,D	mg/kg
Aluminum	35000 D	mg/kg
Boron	32 D	mg/kg
Barium	270 D	mg/kg
Beryllium	8.9 D	mg/kg
Calcium	250000 B,E,J,D	mg/kg
Cadmium	2.8 U,B,J,D	mg/kg
Cobalt	16 U,D	mg/kg
Chromium	120 J,D	mg/kg
Copper	60 J,D	mg/kg
Iron	22000 J,D	mg/kg
Potassium	3600 D	mg/kg
Lithium	42 B,D	mg/kg
Magnesium	47000 B,D	mg/kg
Manganese	4400 B,E,J,D	mg/kg
Molybdenum	32 U,B,J,D	mg/kg
Sodium	2600 D	mg/kg
Nickel	32 U,D	mg/kg
Lead	40 U,J,D	mg/kg
Strontium	260 B,D	mg/kg
Titanium	1000 D	mg/kg
Vanadium	51 B,J,D	mg/kg
Zinc	100 B,D	mg/kg

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US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S20 Station ID: SWMU50-WNW  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2.4 U,J,D	mg/kg
Aluminum	35000 D	mg/kg
Boron	29 D	mg/kg
Barium	240 D	mg/kg
Beryllium	11 D	mg/kg
Calcium	240000 B,E,J,D	mg/kg
Cadmium	2.8 U,B,J,D	mg/kg
Cobalt	16 U,D	mg/kg
Chromium	89 J,D	mg/kg
Copper	17 J,D	mg/kg
Iron	12000 J,D	mg/kg
Potassium	3400 D	mg/kg
Lithium	49 B,D	mg/kg
Magnesium	46000 B,D	mg/kg
Manganese	2200 B,E,J,D	mg/kg
Molybdenum	31 U,B,J,D	mg/kg
Sodium	2900 D	mg/kg
Nickel	31 U,D	mg/kg
Lead	39 U,J,D	mg/kg
Strontium	260 B,D	mg/kg
Titanium	970 D	mg/kg
Vanadium	14 B,J,D	mg/kg
Zinc	120 B,D	mg/kg

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US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S21 Station ID: SWMU50-SSE  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2.3 U,J,D	mg/kg
Aluminum	35000 D	mg/kg
Boron	32 D	mg/kg
Barium	280 D	mg/kg
Beryllium	11 D	mg/kg
Calcium	240000 B,E,J,D	mg/kg
Cadmium	2.7 U,J,D	mg/kg
Cobalt	16 U,D	mg/kg
Chromium	82 J,D	mg/kg
Copper	8.7 J,D	mg/kg
Iron	12000 J,D	mg/kg
Potassium	3600 B,D	mg/kg
Lithium	50 D	mg/kg
Magnesium	49000 B,D	mg/kg
Manganese	2700 B,E,J,D	mg/kg
Molybdenum	31 U,B,J,D	mg/kg
Sodium	3000 D	mg/kg
Nickel	31 U,D	mg/kg
Lead	39 U,J,D	mg/kg
Strontium	270 B,D	mg/kg
Titanium	960 D	mg/kg
Vanadium	22 B,J,D	mg/kg
Zinc	130 B,D	mg/kg

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US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S22 Station ID: SWMU50-N  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2. U,J,D	mg/kg
Aluminum	33000 D	mg/kg
Boron	28 D	mg/kg
Barium	230 D	mg/kg
Beryllium	10 D	mg/kg
Calcium	230000 B,E,J,D	mg/kg
Cadmium	2.4 U,J,D	mg/kg
Cobalt	14 U,D	mg/kg
Chromium	90 J,D	mg/kg
Copper	15 J,D	mg/kg
Iron	14000 J,D	mg/kg
Potassium	3200 B,D	mg/kg
Lithium	47 D	mg/kg
Magnesium	45000 B,D	mg/kg
Manganese	2600 B,J,E,D	mg/kg
Molybdenum	27 U,B,J,D	mg/kg
Sodium	2600 D	mg/kg
Nickel	27 U,D	mg/kg
Lead	34 U,J,D	mg/kg
Strontium	250 B,D	mg/kg
Titanium	930 D	mg/kg
Vanadium	19 B,J,D	mg/kg
Zinc	120 B,D	mg/kg

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US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S23 Station ID: SWMU50-N TANK  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2.4 U,J,D	mg/kg
Aluminum	36000 D	mg/kg
Boron	28 D	mg/kg
Barium	250 D	mg/kg
Beryllium	11 D	mg/kg
Calcium	250000 B,E,J,D	mg/kg
Cadmium	2.8 U,J,D	mg/kg
Cobalt	16 U,D	mg/kg
Chromium	67 J,D	mg/kg
Copper	13 J,D	mg/kg
Iron	15000 J,D	mg/kg
Potassium	3500 B,D	mg/kg
Lithium	48 D	mg/kg
Magnesium	48000 B,D	mg/kg
Manganese	2300 B,J,E,D	mg/kg
Molybdenum	32 U,B,J,D	mg/kg
Sodium	3000 D	mg/kg
Nickel	32 U,D	mg/kg
Lead	41 U,J,D	mg/kg
Strontium	260 B,D	mg/kg
Titanium	1000 D	mg/kg
Vanadium	15 B,J,D	mg/kg
Zinc	100 B,D	mg/kg

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US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S24 Station ID: SWMU11-NE/SE  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2.4 U,J,D	mg/kg
Aluminum	17000 J,D	mg/kg
Boron	28 J,D	mg/kg
Barium	48 D	mg/kg
Beryllium	0.4 U,J,D	mg/kg
Calcium	210000 B,E,J,D	mg/kg
Cadmium	2.8 U,D	mg/kg
Cobalt	16 U,J,D	mg/kg
Chromium	770 D	mg/kg
Copper	11 D	mg/kg
Iron	190000 J,D	mg/kg
Potassium	480 B,J,D	mg/kg
Lithium	16 U,J,D	mg/kg
Magnesium	47000 B,D	mg/kg
Manganese	19000 B,E,D	mg/kg
Molybdenum	32 U,B,J,D	mg/kg
Sodium	660 D	mg/kg
Nickel	32 U,D	mg/kg
Lead	46 D	mg/kg
Strontium	100 B,D	mg/kg
Titanium	1900 D	mg/kg
Vanadium	960 B,J,E,D	mg/kg
Zinc	550 B,D	mg/kg

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US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S25 Station ID: SWMU11-N  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2.5 U,J,D	mg/kg
Aluminum	18000 J,D	mg/kg
Boron	29 U,J,D	mg/kg
Barium	54 D	mg/kg
Beryllium	0.4 U,J,D	mg/kg
Calcium	150000 B,J,D	mg/kg
Cadmium	6.8 D	mg/kg
Cobalt	17 U,J,D	mg/kg
Chromium	510 D	mg/kg
Copper	61 D	mg/kg
Iron	200000 J,D	mg/kg
Potassium	730 B,J,D	mg/kg
Lithium	17 U,J,D	mg/kg
Magnesium	44000 B,D	mg/kg
Manganese	57000 B,E,D	mg/kg
Molybdenum	67 B,J,D	mg/kg
Sodium	800 D	mg/kg
Nickel	43 D	mg/kg
Lead	180 D	mg/kg
Strontium	89 B,D	mg/kg
Titanium	1300 D	mg/kg
Vanadium	10000 B,J,E,D	mg/kg
Zinc	2900 B,E,D	mg/kg

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8 Sept 00

US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S26 Station ID: SWMU11-S  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	3.5 J,D	mg/kg
Aluminum	14000 J,D	mg/kg
Boron	29 U,J,D	mg/kg
Barium	29 D	mg/kg
Beryllium	0.4 U,J,D	mg/kg
Calcium	70000 B,J,D	mg/kg
Cadmium	8.8 D	mg/kg
Cobalt	16 U,J,D	mg/kg
Chromium	260 D	mg/kg
Copper	61 D	mg/kg
Iron	150000 J,D	mg/kg
Potassium	650 B,J,D	mg/kg
Lithium	16 U,J,D	mg/kg
Magnesium	29000 B,D	mg/kg
Manganese	23000 B,E,D	mg/kg
Molybdenum	65 B,J,D	mg/kg
Sodium	830 D	mg/kg
Nickel	33 U,D	mg/kg
Lead	250 D	mg/kg
Strontium	47 B,D	mg/kg
Titanium	540 D	mg/kg
Vanadium	150 B,J,D	mg/kg
Zinc	4400 B,E,D	mg/kg

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US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S27 Station ID: SWMU11-NE/NW  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2.4 U,J,D	mg/kg
Aluminum	19000 J,D	mg/kg
Boron	29 U,J,D	mg/kg
Barium	51 D	mg/kg
Beryllium	0.4 U,J,D	mg/kg
Calcium	180000 B,J,D	mg/kg
Cadmium	2.8 U,D	mg/kg
Cobalt	16 U,J,D	mg/kg
Chromium	640 D	mg/kg
Copper	27 D	mg/kg
Iron	200000 J,D	mg/kg
Potassium	530 B,J,D	mg/kg
Lithium	16 U,J,D	mg/kg
Magnesium	48000 B,D	mg/kg
Manganese	24000 B,E,D	mg/kg
Molybdenum	33 U,B,J,D	mg/kg
Sodium	750 D	mg/kg
Nickel	33 U,D	mg/kg
Lead	130 D	mg/kg
Strontium	93 B,D	mg/kg
Titanium	1600 D	mg/kg
Vanadium	710 B,J,D	mg/kg
Zinc	1700 B,D	mg/kg

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US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S28 Station ID: SWMU28/29-NE  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2.3 U,J,D	mg/kg
Aluminum	38000 J,D	mg/kg
Boron	53 J,,D	mg/kg
Barium	240 D	mg/kg
Beryllium	12 J,D	mg/kg
Calcium	270000 B,E,J,D	mg/kg
Cadmium	2.7 U,D	mg/kg
Cobalt	16 U,J,D	mg/kg
Chromium	16 D	mg/kg
Copper	3.9 U,D	mg/kg
Iron	6400 J,D	mg/kg
Potassium	3400 B,J,D	mg/kg
Lithium	44 J,D	mg/kg
Magnesium	55000 B,D	mg/kg
Manganese	2100 B,E,D	mg/kg
Molybdenum	31 U,B,J,D	mg/kg
Sodium	2600 D	mg/kg
Nickel	31 U,D	mg/kg
Lead	39 U,D	mg/kg
Strontium	270 B,D	mg/kg
Titanium	1400 D	mg/kg
Vanadium	13 B,J,D	mg/kg
Zinc	29 B,D	mg/kg

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US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S29 Station ID: SWMU28/29-SE/NE  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2.3 U,J,D	mg/kg
Aluminum	31000 J,D	mg/kg
Boron	43 J,D	mg/kg
Barium	210 D	mg/kg
Beryllium	7.3 J,D	mg/kg
Calcium	210000 B,E,J,D	mg/kg
Cadmium	2.7 U,D	mg/kg
Cobalt	15 U,J,D	mg/kg
Chromium	200 D	mg/kg
Copper	18 B,D	mg/kg
Iron	78000 J,D	mg/kg
Potassium	2500 B,J,D	mg/kg
Lithium	39 B,J,D	mg/kg
Magnesium	47000 B,D	mg/kg
Manganese	5200 B,E,D	mg/kg
Molybdenum	31 U,B,J,D	mg/kg
Sodium	1900 D	mg/kg
Nickel	31 U,D	mg/kg
Lead	39 U,D	mg/kg
Strontium	210 B,D	mg/kg
Titanium	1300 D	mg/kg
Vanadium	140 B,J,D	mg/kg
Zinc	160 B,D	mg/kg

✓  
8/5/00

US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02D29 Station ID: SWMU28/29-SE/NE  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2.4 U,J,D	mg/kg
Aluminum	31000 J,D	mg/kg
Boron	39 J,D	mg/kg
Barium	210 D	mg/kg
Beryllium	8.2 J,D	mg/kg
Calcium	220000 B,E,J,D	mg/kg
Cadmium	2.9 U,D	mg/kg
Cobalt	16 U,J,D	mg/kg
Chromium	140 D	mg/kg
Copper	13 B,D	mg/kg
Iron	56000 J,D	mg/kg
Potassium	2500 B,J,D	mg/kg
Lithium	38 B,J,D	mg/kg
Magnesium	47000 B,D	mg/kg
Manganese	4000 B,E,D	mg/kg
Molybdenum	33 U,B,J,D	mg/kg
Sodium	2000 D	mg/kg
Nickel	33 U,D	mg/kg
Lead	41 U,D	mg/kg
Strontium	220 B,D	mg/kg
Titanium	1200 D	mg/kg
Vanadium	86 B,J,D	mg/kg
Zinc	110 B,D	mg/kg

JW  
8 Sept 00

US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S30 Station ID: SWMU28/29-N  
Sample Batch Number: 20000047 Study: LTV Steel  
Analysis Date: 4 Aug 00

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	2.3 U,J,D	mg/kg
Aluminum	26000 J,D	mg/kg
Boron	37 J,D	mg/kg
Barium	300 D	mg/kg
Beryllium	2.6 J,D	mg/kg
Calcium	160000 B,J,D	mg/kg
Cadmium	2.7 U,D	mg/kg
Cobalt	15 U,J,D	mg/kg
Chromium	450 D	mg/kg
Copper	34 B,D	mg/kg
Iron	150000 J,D	mg/kg
Potassium	1100 B,J,D	mg/kg
Lithium	18 B,J,D	mg/kg
Magnesium	38000 B,D	mg/kg
Manganese	9300 B,E,D	mg/kg
Molybdenum	31 U,B,J,D	mg/kg
Sodium	1300 D	mg/kg
Nickel	55 D	mg/kg
Lead	39 D	mg/kg
Strontium	230 B,D	mg/kg
Titanium	1300 D	mg/kg
Vanadium	360 B,J,D	mg/kg
Zinc	230 B,D	mg/kg

JW  
8 Sept 00



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: SEP 05 2000

Subject: Review of Region 5 Data for LTV Steel

From: Kathleen Sweeny, Chemist  
Region 5 Central Regional Laboratory

To: Brian Freeman  
DF-95

Attached are the results for Site: LTV Steel

CRL Data Set Number: 20000047

for analyses of : 8 RCRA ICP Metals

Results are reported for sample numbers: 2000RC02S01, S02, S03, S04, S05, S06, D05, R03, R27

Results Status:

- (X) Acceptable for Use  
( ) Data Qualified, but Acceptable for use  
( ) Data Unacceptable for Use

9/7/00

Jonathan,  
This data appears to be  
acceptable for use for the DV case.  
Brian

2000 0047

901020

ENVIRONMENTAL PROTECTION AGENCY  
FOR THE TEAM: METALS

DIVISION/BRANCH RCRA

DU NUMBER 901020

SAMPLE DATE 7/11/00 LAB ARRIVAL DATE 7/12/00 DUE DATE 8/28/00

DATA SET NUMBER 2000 0047

STUDY LTV

PRIORITY ~

CONTRACTOR TECHLAW

CHL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS WATER AS UG/L MET111	TOTAL METALS WATER AS UG/L MET181	TOTAL METALS WATER PB UG/L MET1191	TOTAL METALS WATER Hg UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221
2000RC02S01	5176197-198 TAR STORAGE TANKS #1, MS/MSD	X			X	X	
2000RC02S02	5176 205 TAR STORAGE TANKS #2	X		X	X	X	
2000RC02R03	5176207 RINSATE BLANK FROM AUGER STEM	X		X			
2000RC02S03	5176307 EQUIPMENT/MAINTENANCE SHED	X		X			
2000RC02S04	5176600 NORTH DECANTER TANK	X		X			
2000RC02S05	5176129 SOUTH DECANTER TANK	X		X			
2000RC02D05	DUPLICATE 5176018 SOUTH DECANTER TANK	X		X			
2000RC02S06	DOWNGRADIENT 5176223 DECANTER TANKS	X		X		X	

\* RCRA 8 METALS  
(incl. Hg)

Narrative Date: 08 30 2000  
Analyst: K. Swan  
Batch Number: 20000047  
Study: LTV Steel  
Parameter: ICP Metals

#### ICP NARRATIVE for Data Set 20000047

Nine samples (2000RC02S01-S06, R03, D05, R27) was submitted for the analysis of 8 RCRA metals. The samples were collected on 07 11 00 and received by the CRL on 07 12 00.

The sample and digestion QC were digested for ICP metals on 7 17 00, following the 200.2 hot block standard digestion protocols for water samples. All samples were digested within the six month hold time for metals. Sample analysis was performed on 08 07 00 and 08 08 00.

All analytical results files, sample information files and reformat files for ICP can be found on the R5CRL data server using the following paths: h:\r5crl\vol3\metals\Kswan\20000047\3300dv.

The narrative, QC summary spreadsheets, sample result calculation spreadsheets and the final sample report for ICP can be found on the R5CRL data server using the following path:  
h:\r5crl\vol3\metals\Kswan\20000047\Reports

#### Results file 20000047 1196 080700

QC was within range.

Narrative by: Kathleen Swan Chemist, USEPA  
Date: 09 01 00

## CRL Data Review Qualification Codes

QUALIFIER	DESCRIPTION
B	This flag is used when the analyte is found in the associated <u>Blank</u> as well as the sample. It indicates possible blank contamination and warns the user to take appropriate action while assessing the data.
D	This flag is used when the analyte concentration results from a required <u>Dilution</u> of the sample, extract or digestate.
E	This flag is used to identify analyte concentrations <u>Exceeding</u> the upper calibration range of the analytical instrument after dilution of the sample, extract or digestate. <u>The reported value is considered to be estimated</u>
J	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, at or above the CRL reporting limit (RL) but the quantitated value is <u>estimated</u> due to quality control limit(s) being exceeded. This flag accompanies all GC/MS tentatively identified compounds (TICs). This flag also applies to a suspected, unidentified interference. ( <u>J</u> is the flag used in the Superfund CLP SOW and Data Review Functional Guidelines and is used by CRL for consistency.)
M	This flag is used when the analyte is confirmed to be qualitatively present in the sample, extract or digestate, at or above the CRL <u>Method Detection Limit</u> (MDL) but below the CRL reporting limit (RL). This flag applies to all values in this concentration range and indicates the quantitated value is <u>estimated</u> due to its presence in this concentration range.
N	This flag applies to GC/MS <u>Tentatively Identified Compounds</u> (TICs) that have a mass spectral library match.
Q	This flag applies to analyte data that are severely estimated due to quality control and/or <u>Quantitation</u> problems, but are confirmed to be qualitatively present in the sample. <u>No value is reported with this qualification flag</u> .
R	This flag applies to analyte data that are <u>Rejected</u> and unusable due to severe quality control, quantitation and/or qualitative identification problems. No other qualification flags are reported for this analyte. <u>No value is reported with this qualification flag</u> .
U	This flag is used when the analyte was analyzed but <u>Undetected</u> in the sample. The CRL RL for the analyte accompanies this flag. As with sample results that are positive, the value is corrected for dry weight, dilution and/or sample weight or volume.

US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S01 Station ID: Tar Storage  
Sample Batch Number: 20000047 Tank #1  
Analysis Date: 08 07 00 Study: LTV Steel

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	0.002	U mg/L
Barium	0.040	mg/L
Cadmium	0.001	U mg/L
Chromium	0.050	mg/L
Lead	0.01	U mg/L

UKS  
9 X 00  
5

US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S02 Station ID: Tar Storage  
Sample Batch Number: 20000047 Tank #2  
Analysis Date: 08 08 00 Study: LTV Steel

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	0.002	U
Barium	0.104	mg/L
Cadmium	0.001	U
Chromium	0.133	mg/L
Lead	0.04	mg/L

KRS  
9/24/00  
5

US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S03 Station ID: Equip/Mtce  
Sample Batch Number: 20000047 Shed  
Analysis Date: 08 08 00 Study: LTV Steel

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	0.002 U	mg/L
Barium	0.102	mg/L
Cadmium	0.001 U	mg/L
Chromium	0.003 U	mg/L
Lead	0.01 U	mg/L

KRS  
a 4/00  
5

US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S04 Station ID: N. Decanter  
Sample Batch Number: 20000047 Tank  
Analysis Date: 08 08 00 Study: LTV Steel

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	0.002 U	mg/L
Barium	0.099	mg/L
Cadmium	0.001 U	mg/L
Chromium	0.003 U	mg/L
Lead	0.01 U	mg/L

KPS  
9/4/00  
5

US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S05 Station ID: S. Decanter  
Sample Batch Number: 20000047 Tank  
Analysis Date: 08 08 00 Study: LTV Steel

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	0.002 U	mg/L
Barium	0.057	mg/L
Cadmium	0.001 U	mg/L
Chromium	0.003 U	mg/L
Lead	0.01 U	mg/L

KRS  
9400  
5

US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02D05 Station ID: S. Decanter  
Sample Batch Number: 20000047 Tank  
Analysis Date: 08 08 00 Study: LTV Steel

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	0.002 U	mg/L
Barium	0.054	mg/L
Cadmium	0.001 U	mg/L
Chromium	0.003 U	mg/L
Lead	0.01 U	mg/L

IURS  
9400  
5

US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02S06 Station ID: Downgrad-  
Sample Batch Number: 20000047 ient Tanks  
Analysis Date: 08 08 00 Study: LTV Steel

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	0.002 U	mg/L
Barium	0.025	mg/L
Cadmium	0.001 U	mg/L
Chromium	0.003 U	mg/L
Lead	0.01 U	mg/L

KKS  
9400  
5

US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02R03 Station ID: Rinsate from  
Sample Batch Number: 20000047 Auger stem  
Analysis Date: 08 08 00 Study: LTV Steel

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	0.002 U	mg/L
Barium	0.002 U	mg/L
Cadmium	0.001 U	mg/L
Chromium	0.003 U	mg/L
Lead	0.01 U	mg/L

KRS  
9400  
S

US EPA CRL - Region V  
ICP Final Report Results

Sample Number: 2000RC02R27 Station ID: Post rinse  
Sample Batch Number: 20000047  
Analysis Date: 08 08 00 Study: LTV Steel

<u>Element</u>	<u>Amount</u>	<u>Units</u>
Silver	0.002	U mg/L
Barium	0.002	U mg/L
Cadmium	0.001	U mg/L
Chromium	0.003	U mg/L
Lead	0.01	U mg/L

KRS  
9400  
5

ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF CRIMINAL ENFORCEMENT, FORENSICS, AND TRAINING  
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER  
BUILDING 53, BOX 25227, DENVER FEDERAL CENTER  
DENVER, COLORADO 80225

R E C E I V E D  
JUN 03 1997

DIVISION FRONT OFFICE  
Waste, Pesticides & Toxics Division  
U.S. EPA - REGION 5

May 28, 1997

MEMORANDUM

Subject: Analytical Findings  
LTV Steel Corporation Investigation  
NEIC Project Q87

From: Diana A. Love, Esq.  
Director, NEIC

To: Jonathan Adenuga  
EPA Technical Manager  
EPA, Region V

Attached is a report for the subject Case. If there are any questions, please contact John Simon Jr. at (303) 236-5132, extension 264.

ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF ENFORCEMENT  
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER  
BUILDING 53, BOX 25227, DENVER FEDERAL CENTER  
DENVER, COLORADO 80225

RECEIVED

SEP 25 1996

OFFICE OF RCRA  
DATE: September 25, 1996  
WASTE MANAGEMENT DIVISION  
EPA, REGION V

MEMORANDUM

SUBJECT: Sample Analysis - LTV Steel Corp.

FROM: Gene Lubieniecki *(Signature)*  
Civil Program Coordinator

TO: Joseph M. Boyle, Chief  
Enforcement and Compliance Assurance Branch  
Region 5

We are in receipt of your request for the analysis of twelve samples from the roll-shop operations at the LTV Corporation. The samples arrived on September 18, 1996. The NEIC Laboratory Branch will perform Toxicity Characteristic Leaching Procedure (TCLP) and Chromium Speciation testing on these samples. The analytical work should be completed during the first quarter of FY97.

The NEIC contacts for any questions related to the work are Dr. Joe Lowry (303-236-5132, ext 286) and John Simon (303-236-5132, ext 264).

cc: Joe Lowry, Laboratory Branch, NEIC  
John Simon, Laboratory Branch, NEIC

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5

DATE: [SEP 11 1986]

SUBJECT: Analysis of samples to be collected from  
LTV Steel Corp.  
East Chicago, Indiana  
IND 005 462 601

FROM: Joseph M. Boyle, Chief  
Enforcement and Compliance Assurance Branch

TO: Gene Lubieniecki  
Civil Program Coordinator  
National Enforcement Investigation Center

Pursuant to the telephone conversation between Jonathan Adenuga of my staff and Margo Dusenberry and Douglas Kendall of your staff regarding collection and analysis of samples from LTV Steel Corporation, this is to inform you that the United States Environmental Protection Agency (U.S. EPA) has arranged for the collection of swarf samples from roll-shop operations at the LTV Steel Corporation. The overall objective as discussed is to determine if the swarf generated at the facility exhibits the toxicity characteristic for chromium as defined in 40 CFR 261.24. Sampling activities are scheduled to begin on September 17 and 18. PRC Inc., under contract with U.S. EPA, has received a work assignment to collect these samples at the LTV Steel Corporation.

Specifically, U.S. EPA plans to collect approximately a total of 10 samples from the No. 2 Tin Mill, No. 3 Sheet Mill, 84" Hot Strip Mill; and 2 samples from the Landfill. We are requesting that the National Enforcement Investigation Center Laboratory perform the Toxicity Characteristic Leaching Procedure and the Chromium Speciation analysis on the collected samples. I understand that you will provide a written report on all analyses performed on these samples as soon as time permits.

If you have any questions, please contact me at (312) 886-4434 or Jonathan Adenuga at (312) 886-7954.

cc: Christine Liszewski, ORC

cc: Christine Liszewski, ORC

bcc: Branch Copy  
Section Copy  
Author's Copy

DRE-8J/JA:be:6-7954/8/29/96/filename:a:ltv.mem

**ENFORCEMENT AND COMPLIANCE ASSURANCE BRANCH**

SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY
<i>154.829/16</i>					
AUTHOR/ TYPIST	MINN/OHIO SECTION CHIEF	MICHIGAN/ WISCONSIN SECTION CHIEF	ILLINOIS/ INDIANA SECTION CHIEF	ECAB BRANCH CHIEF	WPTD DIVISION DIRECTOR
JWA 8/29/96			<i>LMP 8/29/96</i>		